STATISTICAL MODELS OF PRODUCTIVITY IN LOCAL GOVERNMENT IN ENGLAND AND WALES WITH SPECIAL REFERENCE TO WASTE COLLECTION

by

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A thesis submitted for the degree
of Doctor of Philosophy

Department of Management Studies,
University of Glasgow

Glasgow, 1986

Declaration

No portion of the work referred to in this study has been submitted in support of an application for another degree or qualification of this or any other university or other institution of learning.

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ABSTRACT

Productivity is measured either in physical terms or financial terms. Each of which has its advantages and disadvantages which are discussed in this thesis.

Productivity in local government activities in England and Wales should be measured by using many measurements, to give enough information to different groups who are interested in this area, such as central government, taxpayer, consumers, voters, councillors, workers and their unions.

Waste collection is one of the local government activities whose productivity was measured physically in this research, by dividing the total waste collected (in tonnes) by the total manual workers. Furthermore, we used some additional measurements which give more indications for productivity and its growth for different people who are interested in this area. These measurements are: (1) costs per tonne, (2) costs per person served, (3) wages and salaries, and (4) the number of unemployed people.

Time series study was done in waste collection in England and Wales in 1978-79 till 1983-84 to find out the relationships between the different methods which were used in measuring productivity. From this study it was found that : (1) there was always a growth of productivity in waste collection in England and Wales during that period, (2) the growth of productivity was nearly always accompanied by the reduction in costs per tonne and in costs per person served, and (3) the growth of productivity was nearly always accompanied by an increase in wages and salaries and in the number of unemployed.

Cross section analysis was done for the four areas in England and Wales in 1983-84, to build up a satistical model for the productivity of waste collection in each of these areas which are London Boroughs, Metropolitan Districts, Non-Metropolitan Districts - England, and Non-Metropolitan Districts - Wales. Two criteria were used to find out how satisfactory our variables are to explain the productivity in waste collection, which were measured in this analysis by costs per person served, these criteria are the value of R^2 or $\bar{R}^2$ and the significance of each equation.

By using these two criteria it was found that our variables were satisfactory in London Boroughs, Metropolitan Districts, and Non-Metropolitan Districts - England, while they were not satisfactory in Non-Metropolitan Districts - Wales. So the statistical models in London Boroughs, Metropolitan Districts and Non-Metropolitan Districts - England, are recommended to be used to anticipate the productivity in waste collection, while the statistical model in Non-Metropolitan Districts - Wales is not recommended to be used for the same purpose.

The lack of goodness of fit of our variables in Non-Metropolitan Districts - Wales is expected to be because of the lower number of population in this area compared with the other areas, and because this area is the most rural area in England and Wales. So it is recommended for the researchers to make a new study in waste collection in Non-Metropolitan Districts - Wales, by using different variables in addition to all or some of our variables.

ACKNOWLEDGEMENTS

I should like to record my appreciation to Professor David Weir, the Head of Department of Management Studies at the University of Glasgow and the supervisor of this research, for the insights I gained by resting on this topic. Without his encouragement, support and numerous stimulating comments and advice from the initial proposal through to the final work, this study would never have been completed. His way of open-arm supervision is an added asset.

I am also grateful for the Egyptian Government and Ain Shams University for financial and encouraging support to enable me to undertake this study. Additionally, I wish to express my grateful thanks to all the others who have participated in one way or another in the planning, execution and presentation of this study in its final form.

Lastly, but by no means least, I wish to express my sincere gratitude to my wife, Yomn and my son, Mohamed, to whom this Thesis is dedicated, in recognition of their tolerance, encouragement and endless patience which have sustained me over the past five years.

M.S.I. NADA
August, 1986.

DEDICATION

To my wife, Yomn

To my son, Mohamed

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CHAPTER I

INTRODUCTION

1.1 The Growth of Productivity in Micro and Macro Economic Levels

In a micro-economic level the growth of productivity has different meanings for different people. In this case Connellan points out that:

> "'Productivity', or 'human performance improvement' means different things to different people. To workers, productivity means a speed up in their work patterns. To union leaders, it means the opportunity to negotiate for higher wages. To management, it means increased profitability; to consumers, it means better goods at lower cost." (1)

In the same case Eilon notes that:

> "the greater the output can be achieved from a given input, the better off is the enterprise. It can cover its costs, it can improve the remuneration and working conditions of its employees, it can reward its investors, and it can modernize and expand." (2)

It is shown in the above two quotations that the growth of productivity is an important fact for employers, investors, managers, workers and employees and their unions, and customers. It is also shown that each of these groups is looking to the growth of productivity with different viewpoint than the others, and this is shown as follows.

Employers and investors are looking to the growth of productivity, because it could mean an increase in the company's profit and in turn their share of that profit.

Managers are looking to the growth of productivity because it could mean the reduction of unit costs, which means, on the other hand, an increase in their profits and it can assist them in cutting the prices of their goods and services. This means the expansion of the company in a competitive market.

Workers and employees are looking to the growth of productivity because it means an increase in their wages and salaries, especially if there is a link between productivity from one side and wages and salaries from the other side. Furthermore, the growth of productivity could mean the improvement in their working conditions.

The unions of workers and employees are looking to the growth of productivity because it helps them in their negotiations with the government or with the employers, to increase the wages and salaries. Productivity represents an essential element on the negotiation table.

Customers are looking to the growth of productivity because it could mean the reduction in prices of goods and services. This means they would be paying less for the same quantity of goods and services. Therefore the customers can consume the same quantity of goods and services at a lower cost or they can consume a higher quantity of goods and services at the same level of cost.

In a macroeconomic level, the usefulness of the growth of productivity depends on its impact on the growth of the whole economy. Economic growth means more and more goods and services will be available to meet the needs of the people.

The growth of productivity which is accompanied by the growth of economy is always desirable for many reasons. The first reason is that the growth of economy can improve the standard of living, and this depends on the relationship between the growth of economy from one side and the growth of population on the other side. In this connection Craven notes that:

> "Increases in outputs are referred to as economic growth. As long as outputs increase more rapidly than the population economic growth allows that on average each person can consume more goods or that the government can implement policies to increase the incomes of poor people without reducing the incomes of other people." (3)

This quotation shows that the relationship between the growth of productivity and the standard of living depends on its relationship with the growth of population. If the rate of economic growth is higher than the rate of population growth the growth of productivity means an improvement in the standard of living.

If the rate of economic growth is equal to the rate of population growth in this case the growth of productivity maintains the same level as the standard of living.

If the rate of economic growth is less than the rate of population growth in this case the increase in productivity leads to a lower level in the standard of living.

The second reason is that the economic growth is a very important factor which can control the inflation rate by making a balance between the growth of incomes and the gorwth of outputs. This view is supported by Gedye when he notes that:

> "Most governments in both the developed and underdeveloped countries have since the war pursued with varying success a policy that aims at steady growth and it is a fundamental factor in the control of inflation to match growth of incomes to growth of productivity." (4)

From this quotation it is found that the growth of economy has an impact on the inflation rate and this depends on its relationship with the growth of financial income.

If the growth of output is equal to the growth of the financial income, the growth of productivity keeps the prices at the same level. If the growth of output is higher than the growth of this income, the growth of productivity can reduce the level of prices. If the growth of output is less than the growth of this income the growth of productivity is accompanied by a higher level of prices.

The third reason is that controlling the inflation rate could maintain or improve the value of home currency compared with other foreign currencies.

The fourth reason is that the growth of productivity could also have an impact on the international competitiveness. International competitiveness means the ability of a country's producers to compete in world markets. In this case O'Cofaigh (5) notes that competitiveness means the ability of the country to produce and sell its output to international markets.

This ability depends mainly on the costs of the domestic products compared with the costs of foreign products. So to improve the competitive situation in the international markets, we have to try to reduce the unit cost of domestic products.

The growth of productivity is an important factor which could cause the reduction of unit cost. Therefore, the rate of growth of productivity of domestic products compared with the growth of productivity of foreign competitors is an important determinant of the international competitiveness.

But sometimes the growth of productivity is not accompanied by the growth of output because of the stability or the reduction of domestic

and international demand of the country's goods and services. In these cases the increase in productivity could lead the managers to reduce the workforce of their companies to maintain the same level of output or to reduce the quantity of output.

The reduction of the workforce could lead the country to face the problem of unemployment, which causes some social problems.

1.2 The Growth of Productivity in the Public Sector

According to Pirie when he points out that:

> "With no money spent on advertising, no duplication of effort in wasteful competition, and no profit to provide, it was thought that the public service would be superior to any provided by private sector." (6)

It is shown in the previous quotation that costs in the public sector should be less than the private sector, because the public sector can save some of the costs which are essential in the private sector, such as advertisements. Furthermore, the public sector does not pay taxes and is always utilised from the economy of scale and the economy of contiguity.

But costs in any sector do not depend only on these factors, but also on the efficiency of running any activity. Therefore costs in public sector activities are affected by the expected inefficiency of this sector compared with the private sector, because the public sector suffers from many problems. These problems are discussed as follows.

The first problem is that most of the public sector activities suffer from the lack of competition, because the public sector is the only provider of some of its services, or the provider of the majority of

the other services. Therefore, the public sector is almost always in a monopoly position in providing its services.

The lack of competition means the reduction in searching for efficiency, because there is no need to try to meet consumers' wishes in order to remain in business, and because there is no sanctions of bankruptcy. In this case Stevens (7) notes that when there is no competition, but instead only a government monopoly, there is no incentive for efficient production and no penalty for inefficiency.

The second problem is that the public sector is suffering from the lack of its goals, compared with the private sector. The private sector has always a clear objective, which is to make a profit, while there is no clear objective for each of the public sector activities. Each activity has many goals in the minds of different people, each might contradict others.

For instance, the goals of the education system from the pupils' point of view are to increase their incomes and to improve their status in the future, while the goals from government's point of view are to qualify people to do some kind of jobs, to increase the pupils' future productivity, and to increase the number of educated people.

The lack of clarity in public sector goals might cause the low level of its productivity compared with the private sector.

The third problem is that the public sector is suffering from lack of control compared with the private sector, because the ownership of the public sector is spread among all citizens, while the ownership of the private sector is spread among fewer people. Therefore the value per owner in controlling the public sector activities is much less than the

value per owner in the private sector. As the result of this the public owner has the feeling that his portion of benefits of what he is doing to follow up the public sector activities is very small compared to his efforts.

Furthermore most of the citizens do not feel that they are the owners of the public sector because (1) the public owner is not voluntary but is compelled to be a public owner (2) the public owner is unable to sell or exchange his public ownership to private property and (3) the public owner does not receive balance sheets or profit and loss statements for the public sector activities.

For the above reasons it is expected that the owners in the public sector have little incentive to follow up the act of the public sector and this could cause less growth in productivity in this sector compared with the private sector. This view is supported by Caves & Christensen when they point out that:

> "Public ownership is diffused among all members of society and no member has the right to sell his share. Given these aspects of public ownership there is little economic incentive for any owner to monitor the behaviour of the firm's management." (8)

The fourth problem is the lack of measuring the productivity in the public sector activities. Productivity is always measured by dividing the output of any activity by one or more of its input. But it is very difficult to measure the output of most of the public sector activities because they are not for sale and because of the multiplicity of its purposes there is no one measurement used to give sufficient indication to the different people who are interested in these activities.

The absence of an accurate measurement for productivity in this sector, means the lack of data about employees' performance. This could mean the reduction in its productivity compared with the private sector because (1) the absence of data which could be used as a base for motivation system, and (2) the absence of data which could be used for planning and controlling.

The fifth problem is that the public sector activities are always governed by bureaucratic routine, by hierarchical fashion with different levels of responsibility and with lines of communication. As the result of these it is thought that the public sector activities are always slow in responding to the demands of customers and employees. They are always slow in taking new decisions and this can cause the lower growth in public sector productivity compared with the private sector.

The additional problems are the problems which are expected to be due to the previous ones. These are (1) because of their monopolies position, the public sector activities suffer from corruption. Corruption means that some of the public sector staff are tempted to exercise the monopoly power to their advantage. Therefore, corruption can direct the actions and the decisions of public sector managers, in the wrong direction. In this case Doig points out that:

> "Corruption is bribery and bribery is corruption. Bribery is a transactional offence that concerns the use or proposed use of inducements or rewards to influence actions or decisions by politicians and public servants to ensure an outcome specifically favourable to the donor." (9)

(2) some of the public sector activities are governed by the absence of the linkage between wages and salaries on one hand and productivity on

the other So it is expected that their workers do not have the motive to work hard therefore it is expected that their productivity has to be lower than the private sector (3) most of the decisions in public sector activities depend on political matters and not on economic matters and this could have a negative impact on its productivity (4) due to the previous problem it is expected that the negative impact on productivity by trade unions is stronger in the public sector than in the private sector The reasons for this are mentioned by Pommerehne & Frey (10) when they note that politicians depend on the trade union vote for survival and may be inclined to accept their demands for grants and other favours because if they oppose the trade union demand strikes could take place and this may reduce their re-election chances, and (5) because of the lack of searching for efficiency in the public sector the level of technology and the level of managerial expertise in this sector are expected to be lower than the private sector.

1.3 The Growth of Productivity in the Public Sector in the U.K.

Despite the expected inefficiency in the public sector compared with the private sector, for the reasons which have just been mentioned, it is found that the size of the public sector in the U.K. is very big and has progressively increased from year to year. Therefore it is expected that the growth in productivity in the public sector in the U.K. is very important in reducing the large quantity of money which is expended there and by keeping at least the same quantity and quality of

public sector services.

The size of the public sector could be measured either in absolute figures by its total expenditures during each year, or in relative figures as a percentage of Gross National Product. It is expected that the absolute figures do not represent the size and growth of that size between different years, because these figures are affected by the change in price levels between different years as the result of inflation. Therefore, we prefer to use the relative figures which are illustrated in Table 1.1. as they are more representative for the size and growth of the public sector.

It is shown in Table 1.1 that the public sector in the U.K. has grown sharply during this century. It was 14.4% of the Gross National Product at the beginning of this century and it became 54.5%, 52.0% and 51.8% in 1975, 1976 and 1979, respectively. The high growth of the public expenditure in the U.K. during this centurty is expected to be due to the increase in public demand for public sector services. This view is supported by Self (11) when he points out that the dramatic rise in public expenditure has been the product of rising demands or expectations about the number and quality of public services.

The rise in demand for the number and quality of public services is expected to be due to the following reasons.

Firstly, the high increase in the number of population in the U.K. from the beginning of this century till 1979, as shown in Table 1.2. It is shown in this table that the population in the U.K. has increased from 38,237,000 at the beginning of this century to 56,227,000 in 1979.

Table 1.1 The Public Expenditure as a Percentage of Gross National Product in the U.K. from 1900 till 1979.

%

1900	1910	1920	1930	1938	1950	1955	1960	1965	1970	1975	1976	1977	1978	1979
14.4	12.7	26.2	26.1	30.0	39.0	36.6	41.2	45.1	47.4	54.5	52.0	49.0	49.6	51.8

Source: Gordon, A., 1982, Economics and Social Policy, Martin Robertson & Company, Oxford, p.14.

This means that the population in the U.K. has increased by 17.990.000 which represents 47.04% rise in population from the beginning of this century.

This high increase in population means the need for higher public expenditure, to keep at least the same level of public services. In this case Sandford[12] notes that we should expect government expenditure to rise if the population increases. In the same case Wright[13] adds that due to the high increase in population governments have found that even to maintain the same level and quality of social benefit or economic assistance has required an increase in public expenditure.

Secondly the U.K. has committed itself to the idea of the Welfare State, which means that the government plays a positive role in the promotion of social welfare.

The Welfare State means that the government has to supply all the people with at least a minimum standard of living. It has to support unemployed people, handicapped, children, pensions, old people, etc., - financial support to keep at least a minimum standard of living. Additionally, the government has to supply some services free of charge or with a small charge compared with its costs. These services include education, housing, waste collection, and so on.

According to this idea the improvement in the standard of living means more public services and more public expenditure, to keep the new minimum standard of living. This view is supported by Wright[14] when

Table 1.2 The Number of Population in the U.K. from 1901 till 1979

Thousands

1901	1911	1921	1931	1951	1961	1966	1971	1975	1976	1977	1978	1979
38,237	42,082	44,027	46,038	50,225	52,709	53,788	55,907	56,215	56,206	56,179	56,167	56,227

Source: Central Statistical Office, 1986, Annual Abstract of Statistics, A Publication of the Government Statistical Services, No. 122, Her Majesty's Stationery Office, London, p.6.

Notes:
1. The Figures in 1901 till 1966 are: Home Population - Census Figures.
2. The Figures in 1971 till 1979 are: Resident Population - Mid Year Estimation.

he notes that expectations about rising standards of living generate problems which in turn generate further expectations for the alleviation of those problems through public sector provision.

It is expected, therefore, that some of the increase in public services and public sector expenditure in the U.K. during this century, was due to the improvement in the standard of living from the beginning of this century till now.

Thirdly, the effect of two world wars. At a time of war the government has to increase its duties to handle the economic activities to solve the problems of war.

As the result of this idea the U.K. governments which were responsible at the time of the first and second world wars, increased their responsibility in handling the economic activities. This view is supported by looking at Table 1.1. In this table it is shown that the public sector expenditure in the U.K. as a percentage of the Gross National Product, has increased from 12.7% in 1910 to 26.2% in 1920, and has increased from 30.0% in 1938 to 39.0% in 1950.

It is expected that the first increase, between 1910 to 1920, was mostly due to the first world war, and the second increase, between 1938 to 1950, was mostly due to the second world war.

By the end of the wars the governments could not reduce their activities to return to normal as they were before the war. This view is supported by Sleeman (15) when he notes that each world war moved public on to a higher general plane, so that it fell back from the wartime peak, it remained at a level considerably higher than before.

The main reasons of the inability of the government to reduce its activities by the end of the war, were (1) people were getting used to receiving some services from the government, so it was not easy for them to accept the reduction in these services, and (2) people were getting more confident in the ability of the government to handle some of the economic activities. In this case Sleeman points out that:

> "the psychological effects of the two world wars were immensely potent in speeding up the process of change. They got the public used to the idea that the government could do effectively all sorts of things in the national interest, such as organising and controlling war production, controlling the use of labour and other resources, and providing social services to ease overtime hardships."(16)

From the above discussions it is shown that a great part of the growth in public expenditure in the U.K. during this century was due to the two world wars.

Fourthly, the change in economic ideology. The governments in the U.K. tried to apply Keynes' ideology to maintain a high level of employment and for a low level of unemployment, from 1945 till the end of the seventies. In this case Gordon points out that:

> "the thirty years following 1945 when the maintenance of full employment was considered to be an important aim of government economic policy. The thinking of Keynes was very influential in instilling in governments of all political persuasions the belief that they had a duty to create sufficient demand for goods and services to ensure full employment."(17)

According to this ideology public expenditure increased because the government wanted to create jobs for the unemployed. The government had to carry out more services and activities to create more jobs.

Once the government had started to do any additional work, it was very difficult to stop. This view is supported by Sleeman when he points out that:

> "If it has been decided to combat unemployment by spending more on schools and colleges, or on hospitals and other medical services, or on housing, or on more generous social security, all of these create long-term commitments which cannot be cut back with much disruption and hardship."(18)

The above discussion reveals that the applying of Keynesian ideology in the economy of the U.K. was responsible, to a great extent, on the growth of public services and the public sector expenditures in the U.K. during this century.

Fifthly, greater growth in the number of public sector employees than that of other sectors. This is expected to be due to: (1) the increase in public sector activities for the reasons which have been mentioned before, and (2) the public sector is a labour-intensive activity which means that the growth in this area needs more employees than the other sectors.

In the U.K. this view is supported by looking at Tables 1.3 and 1.4. It is shown in Table 1.3 that the total number of employees in Great Britain has increased from 21,648,000 in 1971, to 22,311,000 in 1979, while it is shown in Table 1.4 that total number of employees in the public sector (Public Administration and Defence) has increased from 1,473,400 in 1971 to 1,580,000 in 1979.

This means that the number of employees in all industries and services in the U.K. has increased by 3.06% from 1971 till 1979, while the number of employees in the public sector in the U.K. has increased by

Table 1.3 Total Employees in Employment in Great Britain from 1971 till 1979 (Total Industrial and Services).

Thousands

1971	1972	1973	1974	1975	1976	1977	1978	1979
21,648	21,650	22,182	22,297	22,138	22,048	22,126	22,163	22,311

Source: Department of Employment Gazette, (various issues).

Notes:
1. These data are taken from the table of Employees in Employment - Industrial Analysis, in June each year.
2. The data of Great Britain which is mentioned in this table is taken to represent the data of the U.K.

Table 1.4 Employees in Employment in the Public Administration and Defence in Great Britain from 1971 till 1979.

Thousands

1971	1972	1973	1974	1975	1976	1977	1978	1979
1,473.4	1,513.8	1,543.5	1,550.9	1,623.8	1,581.0	1,564.0	1,568.0	1,580.0

Source: Department of Employment Gazette, (various issues).

Notes:
1. These data are taken from the table of Employees in Employment - Industrial Analysis, in June each year, from the Column of Public Administration and Defence.
2. The data of Public Administration and Defence which is mentioned in this table is taken to represent the data of all of the public sector.
3. The data of Great Britain which is mentioned in this table is taken to represent the data of the U.K.

7.23% during the same period. This means that the growth in employees in the public sector in the U.K. during that period was more than double the growth of employees in all industries and services.

The higher growth rate in people employed in the public sector than the other means a higher growth rate in public expenditure than the other sectors.

Sixthly, the change of the demographic factors. This means the change in the number of old people, children and young people. The increase in the number of these people and children means the need for more public expenditure because these types of people and children need more care than others. In this case Sleeman (19) points out that old people tend to make especially heavy demands on the social services, not only for pensions and supplementary benefits, but also for care from the health and personal services, and he adds that children and young people also make heavy demands, especially on education, but also for health maternity and child welfare services.

To know how much this variable is responsible for the growth in public expenditure in the U.K. during this century, the age distribution from 1901 till 1981 is collected and presented in Table 1.5, the percentages in growth of population in different ages is measured and presented in Table 1.6, and the percentages of each age to the total population in each of these years is counted and illustrated in Table 1.7.

It is shown in Table 1.5 that the number of children under 5 years of age in the U.K. has increased from 4,381,000 in 1901 to 44,505,000 in

Table 1.5 Age Distribution of the Enumerated Population (Census Figures) in the U.K. from 1901 till 1981.

Thousands

	1901	1911	1931	1951	1961	1971	1981
Persons all ages	38,237	42,082	46,038	50,225	52,709	55,515	55,113
Under 5	4,381	4,516	3,531	4,326	4,213	4,505	3,349
Under 18				13,248	14,631	15,705	14,274
Under 21				15,162	16,667	17,993	16,936
65 - 74	1,278	1,624	2,461	3,689	3,971	4,713	5,050
75 and over	531	623	957	1,777	2,218	2,594	3,119

Source: Central Statistical Office, 1986, Annual Abstract of Statistics, A Publication of the Government Statistical Services, No. 122, Her Majesty's Stationery Office, London, p.8.

Note: It is mentioned that 1981 data cover the 'usually resident' population and are not strictly comparable with the other data, therefore we could not use these data in our analysis.

Table 1.6 The Percentages of the Growth of Population in Different Ages in the U.K. from 1901 till 1981.

%

	1901	1911	1931	1951	1961	1971	1981
Persons all ages		10.05	9.40	9.09	4.94	5.32	-0.73
Under 5		3.00	-21.82	22.5	-2.62	6.93	-25.67
Under 18					10.44	18.54	-9.29
Under 21					9.93	7.95	-5.88
65 - 74		27.07	51.53	49.90	7.64	18.68	7.15
75 and over		17.32	53.61	85.68	24.82	16.95	20.24

Note: These data are measured by using the data of Table 1.5 by dividing the difference between the figures of two years by the figures in the first year and multiplying the results by 100.

Table 1.7 The Percentages of Each Age to the Total Population in Each Year in the U.K. from 1901 till 1981.

%

	1901	1911	1931	1951	1961	1971	1981
Under 5	11.45	10.73	7.66	8.61	7.99	8.11	6.07
Under 18				26.37	27.75	28.29	25.90
Under 21				30.19	31.62	32.41	30.73
65 - 74	3.34	3.86	5.34	7.34	7.53	8.48	9.16
75 and over	1.38	1.48	2.07	3.53	4.21	4.67	5.66
Total				41.06	44.36	45.56	45.55

Notes:
1. These data are measured by using Table 1.5 by dividing the figures of each age by the figures of all ages and multiplying the results by 100.
2. The total is measured by adding together under 21 to 65 - 74 to 75 and over.

1971. It is also shown in this table that the number of young people under 18 years of age has increased from 13,248,000 in 1951 to 15,705,000 in 1971, and the number of young people under 21 years old has increased from 15,162,000 in 1951 to 17,993,000 in 1971. This table reveals also that the number of old people between 65 to 74 years of age has increased from 1,278,000 in 1901 to 4,713,000 in 1971, and the number of people 75 years old and over has increased from 531,000 in 1901 to 2,594,000 in 1971.

Table 1.6 shows that there was always a growth in old people (65-74 and 75 and over) and in young people (under 18 and under 21). Therefore it is expected that the total percentages of old people, children and young people is getting higher. This view is supported by looking at Table 1.7, where we can find the total percentages of children, young people, and old people in the U.K. were 41.06%, 44.36% and 45.5% in 1951, 1961 and 1971 respectively.

From the above discussion it was found that there was always an increase in children, young people and old people in the U.K. during this century in absolute figures and in relative figures. Thus it is expexted that this variable has a great impact on the growth of public expenditure in the U.K. during this century.

Seventhly, the change in social structure. This variable means the change in social relationships between people as the result of urbanization and industrialization. Greater urbanization and industrialization leads the country to more individualism. In this case Self (20) notes that the decline of kinship and neighbourhood

groups as a supportive socio-economic system is of very long standing in the Western world, and he adds that since 1945 high employment levels and high activity rates have stimulated the further decline of kinship systems, the increased rights of women and children to a separate life and the formation of smaller households.

The increase in individualism means a greater burden on the shoulders of the public sector because (1) working mothers need day nurseries and nursery schools, (2) the care of old people becomes the responsibility of local authorities and health services, (3) the care of people who suffer from physical or mental incapacity becomes the responsibility of local authorities and the health service too, (4) the lack of parental control has damaged educational performance, (5) the lack of parental control leads to the growth in crime and juvenile delinquency, etc.

The U.K. is one of the Western countries which has suffered from individualism. It is expected that this variable is one of the variables which is responsible for the growth of public expenditure in the U.K. during this century and specially from 1945 till the end of the seventies.

Eighthly, the changes in political power. Before 1914 political power remained effectively in the hands of the burgeois industrial and commercial interests, together with the large landowners. But now due to the universal suffrage, general education and the organisation of mass political parties have greatly altered the political power of trade unions, professional associations and the mass media.

Therefore, governments which were responsible in the U.K. since 1914 have tried to increase their popularity by increasing public expenditure in favour of those who feel that their interests will benefit by it, which could help them in the next election.

Ninethly, the change in the real national product. It is expected that a higher growth in the real national product means more public expenditure, because in this case the government has more resources for giving more services to gain more popularity.

According to this variable it was expected that the public sector expenditures in the U.K. would increase during this century, except in 1920-21, 1929-32 and 1974 onwards. In these years there were slumps in the real national output, while in the other years there was a fairly steady rise which accelerated during the thirty years following the second world war.

By looking at Table 1.1 we can see that public expenditure was high from 1975 till 1979, although there was a slump in the real national product during these years. The percentages of public expenditure to the Gross National Product were 54.5%, 52.0%, 49.0%, 49.6% and 51.8% in 1975, 1976, 1977, 1978 and 1979 respectively.

It is expected that the main reasons for high public expenditure in the U.K. during these years was because of political reasons and not economic reasons. The government which was responsible at that time tried to maintain its popularity by keeping at least the same level of public sector services. This view is supported by Wright when he points out that:

"In the 1970s, for the most part governments preferred to continue to manipulate those economic variables rather than risk political unpopularity by attempting to reduce the level of expectation in society."(21)

Tenthly, the change in price level (inflation). It is expected that inflation has a greater impact on public expenditure than on the expenditure of the other services and activities. The main reason for this is that public activities are mainly labour-intensive activities, therefore a very large part of their current costs consists of wages and salaries for its staff.

Wages and salaries are more sensitive to inflation than the others, so it is expected at the time of inflaton the increase in wages and salaries is always higher than the increase in other variables. Therefore it is expected that during inflation the growth of public sector expenditure has to be higher than the growth of the other sectors' expenditure.

The U.K. is one of the countries which suffered from the problem of inflation, especially during the seventies. Therefore this variable is expected to have a great impact on the growth of public expenditure in the U.K. during the seventies.

Eleventhly, some other reasons. These reasons are mostly due becasue the U.K. became a more urbanized and industrialized country. that means the need for more public services such as: (1) living in large towns and cities needs collective provision of facilities such as pure water supply, sanitation and refuse disposal, which the rural communities could do without, (2) The more industrialised the socity is means more environmental pollution, which needs more public

expenditure to deal with it. In this case Self notes that another burden upon public expenditure has been the need to clean up the pollution caused by new technologies in industry and agriculture, which means the cleaning of rivers, the control of air pollution, and so on.

From the above discussion it is shown that the movement toward the urbanization and industrialization in the U.K. during this century was responsible, too, for the growth in public services and public sector expenditures.

1.4 The Growth of Productivity in Local Government in the U.K.

It is shown in the previous discussion that although the expected inefficiency in the public sector compared with the private sector, it is found that the public sector in the U.K. has grown sharply during this century for many reasons. The actual expenditures in this sector is presented in Table 1.8 as follows.

Table 1.8 The Total Current and Capital Expenditure in the Public Sector in the U.K. in 1978-79 till 1983-84.

£million

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
65,752	76 922	92,672	104 676	113 377	120 328

Source Department of the Environment Welsh Office 1984 Local Government Financial Statistics - England and Wales 1982-83, A Publication of the Government Statistical Service, Her Majesty's Stationery Office, London, p.32.

Notes
1. The values in 1978-79, 1979-80, 1980-81, and 1981-82 are outturn values.
2. The value in 1982-83 is provisional outturn.
3. The value in 1983-84 is an estimated (budget) outturn value.

It is shown in the above table that the total expenditure in the public sector in the U.K. was about £120,000 million in 1983-84. The public sector in the U.K. consists of central government, local government and public corporations. Local government expenditure represents a large part of the public expenditure and of all domestic expenditure, and this will be shown in Tables 1.9, 1.10 and 1.11 as follows.

Table 1.9 The Total Current and Capital Expenditure in Local Government in the U.K. in 1978-79 till 1983-84.

£million

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
17.995	21,613	25.103	26.690	29.332	32,780

Source Department of the Environment Welsh Office, 1984, Local Government Financial Statistics - England and Wales 1982-83, A Publication of the Government Statistical Service, Her Majesty's Stationery Office, London, p.32.

Notes
1. The values in 1978-79, 1979-80, 1980-81 and 1981-82 are outturn values.
2. The value in 1982-83 is provisional outturn.
3. The value in 1983-84 is an estimated (budget) outturn value.

Table 1.10 Local Government Expenditure as a Percentage of Total Public Expenditure in the U.K. in 1978-79 till 1983-84.

%

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
27.4	28.1	27.1	25.5	25.8	27.2

Note These figures are counted by the Department of the Environment Welsh Office by dividing the total expenditure in local government by the total expenditure in the public sector and multiplying the results by 100.

Table 1.11 Local Government Expenditure as a Percentage of Domestic Expenditure in the U.K. in 1978 till 1983.

%

1978	1979	1980	1981	1982	1983
10.1	9.8	10.3	9.9	9.6	9.6

Source Department of the Environment Welsh Office, 1984, Local Government Financial Statistics - England and Wales 1982-83, A Publication of the Government Statistical Service, Her Majesty's Stationery Office, London, p.33

It is shown in Tables 1.9 and 1.10 that the total expenditure in local government in the U.K. was about £33 thousand million in 1983-84 and this represents 27.2% of the total public expenditure. At the same time it is found in Table 1.11 that local government expenditure represents more than 9.5% of all the domestic expenditure. Therefore local government in the U.K. is considered to be an interesting area to be studied in this research.

The current expenditure in local government in the U.K. is financed mainly by the following resources. These are (1) rents and fees charged for services such as car parks, bus fares, etc., (2) local taxation (rates), and (3) grants or subsidies from central government. The breakdown of each of these resources are shown in Tables 1.12 and 1.13 as follows.

Table 1.12 The Resources of Local Government Income in the U.K. in 1978-79 till 1983-84.

£ million

	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
Current Grants	10185	11599	14364	15421	16009	19571
Rates	5789	6913	8743	10966	12195	12325
Others	3656	4413	5199	5458	5488	5063
Total	19639	22925	28306	31845	33692	36959

Source Central Statistical Office. 1985, Financial Statistics, A Publication of the Government Statistical Service, December, No. 284, Her Majesty's Stationery Office, London, p.32.

Table 1.13 The Resources of Local Government Income in the U.K. as a Percentage of Total Income in 1978-79 till 1983-84.

%

	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
Current Grants	51.86	50.59	50.74	48.42	47.51	52.95
Rates	29.47	30.15	30.88	34.43	36.19	33.34
Others	18.67	19.26	18.38	17.15	16.30	13.71

Note: These figures are calculated by using the data of Table 1.12 by dividing the figures of each row by the total income and multiplying the result by 100.

It is shown in Table 1.13 that grants and rates represent about 85% of all the local government incomes. Grants and rates are paid by the taxpayers and by central government. Therefore, the growth of productivity in local government is very important for taxpayers and central government, moreoever to consumers, voters, councillors, workers and their unions. Each one of these groups is looking for growth in productivity from their own viewpoint, which might vary from the viewpoint of the others. These different viewpoints are discussed as follows.

The central government in the U.K. is supporting the local government with nearly £20000 million each year, which represents about 50% of local government current income. The central government wants to cut its support to local government. But the reduction of its financial support could mean the reduction in local government services, therefore central government is looking for growth in local government productivity, because it could mean the reduction in their payments and keeping at least the same level of local government services.

The taxpayers in the U.K. are paying each year about £33000 million as general taxes (grants) and local taxes (rates) to local government activities, which represents about 85% of the local government current income. This large amount of money represents a heavy burden on the taxpayers' income.

In turn, the taxpayers are anxious to reduce their payments, at the same time they are looking to retain the same level of services for their payments as taxes and rates. The only way to reduce their payments and keep the same level of services or improving them is by increasing local government productivity. In this case Schmertz points

out that

> "The problem is compounded by the fact that taxpayers have been expressing resistance to the idea of financing increased costs through higher taxes while simultaneously calling for more return on their tax dollars. These circumstances are forcing public administrators to seek new methods for producing more and better services for each tax dollar and man-year invested. They are trying to make government more productive." (23)

The consumers of local government services are looking to receive more and more services because the costs of these services are always spread among all the taxpayers. Local government can afford more services by two methods. The first is by collecting more money as grants and rates, the second is by increasing local government productivity.

Due to the difficulty of collecting more money, the only way to improve and increase local government services is to increase its productivity. Therefore, the consumers are looking to the growth of local government productivity, because it could mean the increase or improvement in local government services they can receive.

The voters consist of consumers and taxpayers. The consumer is a receiver of local government services, while the taxpayer is a financial supplier for these services. Therefore, there is a contradiction between their viewpoints. The consumers are looking for an increase in these services while the taxpayers are looking to reduce their payments.

To solve this problem local government has to try to increase productivity which could mean the increase in local government services without an increase in their expenditure or with a lower level of expenditure.

The councillors in the U.K. are looking to the growth of productivity for three reasons. The first reason is that central government is supporting local government activities by nearly 50% of their current income, which allows central government to control local government activities by reducing their support or by using specific grants for particular services.

Therefore the councillors are looking to improve local government productivity to face the problem of any reduction in central government grants and to supply the services they want to supply.

The second reason is to try to achieve the contradiction goals for consumers and taxpayers. To achieve these goals the councillors have to try to increase local government productivity to convince these people that they are doing their best to increase these services for the same level of payment or by reducing these payments.

This view is supported by Lucey (24) when he notes that councillors know that in order to be re-elected, they must walk on a narrow line between the demands of those who want the government to do more and those who want to pay less for whatever the government does, and he adds that if they are good administrators they may be able to widen that line by improving the efficiency and productivity of the government. In the same case Hayward points out that:

> "For every official who strives to meet the needs of the public within available revenues, improved productivity is a necessity. For every citizen who expects more public services without increased taxation, productivity improvement must become a priority concern."(25)

The third reason is that the councillors can get little reward beside their self satisfaction if they manage to reduce the expenditure for

the same level of services because it is considered as a kind of success.

Therefore the councillors are looking to the growth of productivity to release central government control, to achieve the contradiction purposes for consumers and taxpayers and to increase their rewards.

The workers in local government in the U.K. are looking to the growth of productivity because it means the increase in their wages and salaries. The main reason for this is that the incentive bonus schemes, which links productivity on one hand and wages and salaries on the other, have been applied in the whole economy and in local government activities in the U.K. since the mid 1960s.

But the growth in productivity might have a disadvantage from the viewpoint of local government workers, because it might be accompanied by the reduction in the number of employed people and an increase in the number of unemployed people, as mentioned before. In turn, the local government workers are looking to the growth of productivity because of its impact on wages and salaries and on the level of staff.

The unions of local government workers are looking to the growth of productivity, because it is considered as a key element in their negotiations with the government to raise the workers' wages and salaries.

The unions are looking also to the impact of the growth in productivity on the level of staff and so on the number of unemployed people.

1.5 The Growth of Productivity in Local Government in England and Wales.

From the previous discussion it is found that the growth of productivity in local government in the U.K. is very important for different people for different purposes. But the growth of productivity in local government in England and Wales is more important than the other parts of the U.K. because the expenditure in England and Wales is much higher than the other parts of the country. The percentages of this expenditure are shown in Table 1.14 as follows:

Table 1.14 The Percentages of Total Local Government Expenditure in England and Wales to Total Local Government Expenditure in the U.K. in 1978-79 till 1982-83.

%

1978-79	1978-80	1980-81	1981-82	1982-83
89.32	89.19	88.85	88.61	88.72

Source: Central Statistical Office 1986, Annual Abstract of Statistics, A Publication of the Government Statistical Service, No. 122, Her Majesty's Stationery Office, London, p.276.

Note:
1. These percentages are measured by dividing the total local government expenditure in England and Wales by the total local government expenditure in the U.K., and multiplying the results by 100.
2. Total local government expenditure includes the expenditure of capital work and other work.
3. The data of 1983-84 is not available in these statistics.

It is shown in Table 1.14 that local government expenditure in England and Wales represents 89% of the total expenditure in the U.K. Therefore it is more important to study productivity and the growth of productivity in England and Wales than in the other parts of the U.K.

But it is expected that the growth of productivity in local government activities, as well as in other activities depends mainly on measuring its productivity. In this case Downey & Balk (26) note that productivity improvement depends to a great extent upon an understanding of how to measure government work.

Measuring productivity gives an indication about whether it has increased or decreased, and whether the company has achieved its target or not. Therefore, we can investigate why it has improved in some parts and why it has not in others. From this investigation we can choose the procedures which will be used to improve productivity in the future.

But it is found that measuring productivity is very difficult in local government services in England and Wales for many reasons. These are (1) local government services are not for sale, so we cannot use the sales value to measure its output, (2) local government activities are suffering from many problems, as mentioned earlier. These problems are the lack of competition, the lack of goals, etc. Due to these problems the cost of these activities is expected to be uneconomic, so cost could not be used as a measurement of its output, and (3) it is very

difficult to find one measurement which gives enough information for the quantity and the quality of running these services.

As a result of this, it was found that we always need to use more than one measurement to measure productivity and the growth of productivity in local government activities for different people and for different purposes.

1.6 The Growth of Productivity in Waste Collection in England and Wales.

Local government activities in England and Wales are divided officially into seven categories. These are (1) education and libraries etc., (2) health and social services, (3) law, order and protection services, (4) local transport, (5) housing, (6) employment, and (7) local environment services.

Each one of these categories contains many functions. Waste collection is one function of local government services and is the local government activity which we are going to study in this thesis, despite its low cost compared with other local government activities in England and Wales, as shown in Tables 1.15 and 1.16.

It is found in Tables 1.15 and 1.16 that waste collection cost is nearly £441 million in 1983-84, which represents about 1% of the total local government expenditure. This means that waste collection is not one of the most important local government services in England and Wales from the viewpoint of its cost. But we think that waste collection is an interesting service to be studied in this research for many purposes These purposes are divided into general and specific purposes.

Table 1.15 Gross Expenditure in Waste Collection and Total Expenditure in Local Government in England and Wales in 1978-79 till 1983-84.

£thousand

	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
Waste Collection Gross Expenditure	265.584	336.241	395,581	424,641	450,984	440,745
Total Expenditure in Local Government	25,639,572	30,102,513	35,513,566	38,344,303	42,254,046	45,491,357

Sources: 1. Appendix A.
2. Central Statistical Office, 1986, Annual Abstract of Statistics, A Publication of the Government Statistical Service, No. 122, Her Majesty's Stationery Office, London, pp.277-8.

Note: Total expenditure in local government is counted by adding the capital expenditure to current expenditure which are mentioned in Annual Abstract of Statistics.

Table 1.16 The Percentages of Waste Collection Expenditure to Local Government Expenditure in England and Wales in 1978-79 till 1983-84.

%

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
1.03	1.11	1.11	1.10	1.06	.96

Note: These figures are counted by dividing the waste collection expenditure by the local government expenditure and multiplying the results by 100.

The general purposes are: (1) this service has a political visibility from the viewpoint of councillors and consumers, may be more than the visibility of the other local government activities which are more costly than this activity, because the lack or the disruption of conducting this service causes many problems, such as the town seems dirtier. The number of citizens who suffer from these kinds of problems are more than the number of citizens who suffer from the disruption of carrying out the other local government services, and (2) this service has its special political visibility in the U.K. and also in England and Wales, because waste collection is one of the local government activities which is included in the privatization programme started at the beginning of Mrs. Thatcher's Government in 1979.

The specific purposes are related to productivity and the growth of productivity which are the main subjects of this research. These purposes are as follows:

1. Lack of previous studies which dealt with productivity in waste collection, therefore this research is considered to be an important study in an area which is suffering from the lack of studies.
2. Productivity and the growth of productivity in this service depends mainly on how to motivate workers to work hard to increase their production. The reasons for this are (a) this service is an intensive labour activity, (b) the majority of its workers are manual workers, and (c) manual work in this service does not need highly skilled workers.
3. The output of this activity is easily measured compared with other local government activities. Therefore waste collection is chosen

to be studied in this research to give clear results rather than other local government activities.

4. Incentive bonus schemes have been applied in this area since the mid sixties. It is expected that the application of these schemes has succeeded in achieving its purposes which are the growth of productivity and the growth of wages and salaries. Therefore, waste collection is seen as an interesting area to be studied to find how these schemes have succeeded.

1.7 The Objectives of the Study

The objectives of our study are to answer the following questions. These are:

1. How to measure the productivity in local government activities in England and Wales?
2. How to measure the productivity in waste collection in England and Wales?
3. What are the relationships between the different methods which are used in measuring productivity in waste collection in England and Wales?
4. What are the variables which affect productivity in waste collection in England and Wales?
5. What are the relationships between productivity and its variables in waste collection in England and Wales?
6. Are these variables satisfactory in explaining the productivity in waste collection in England and Wales?
7. Can we build statistical models to anticipate productivity in waste collection in England and Wales?

1.8 The Research Methodology

In this research two main studies were used. These were (1) time series study and (2) cross section analysis. These two studies are indicated in two separate parts as follows.

1.8.1 Time Series Study: The main purpose of this study is to find the relationship between different methods which are used in measuring productivity in waste collection in England and Wales during a particular period of time. The period used in this study was six years. These years are 1978-79, 1979-80, 1980-81, 1981-82, 1982-83 and 1983-84.

The main reason for using these years is that the data about waste collection in England and Wales is only available for these years in addition to the data for 1976-77, but we could not use the data for 1976-77 in our study because of the absence of data for 1977-78.

The data which is used in this study is the total data of the Waste Collection Statistics, for the above six years. This data was published by the Chartered Institute of Public Finance and Accountancy and is presented in Appendix A.

1.8.2 Cross Section Analysis: The main purposes of doing this kind of study are (1) to suggest the independent variables which affect productivity in waste collection in England and Wales, (2) to know the relationship between these variables and productivity in waste collection in England and Wales, (3) to know how satisfactory these variables are in explaining the productivity in waste collection in England and Wales, and (4) to choose the statistical models which could be used in anticipating productivity in waste collection in England and

Wales.

The methods which were used in this study are shown in separate parts as follows.

1.8.2-1 The Data: The data which was used in measuring the majority of the dependent and independent variables is the data of Waste Collection Statistics in 1983-84, because this was the last year of published data. This data was published as mentioned before by the Chartered Institute of Public Finance and Accountancy, and is mentioned in Appendix B.

1.8.2-2 The Computer: The University of Glasgow multi-access computing system (MAC) was used and the Statistical Package for Social Sciences (SPSS-X) was used to analyse the data in the computer.

1.8.2-3 The Sample: It was found that the data about waste collection in England and Wales was divided mainly into four areas. These were London Boroughs, Metropolitan Districts and Non-Metropolitan Districts - England and Non-Metropolitan Districts - Wales. Our study is therefore divided into four parts, one part for each area.

It is found, too that the number of districts which are included in London Boroughs, Metropolitan Districts and Non-Metropolitan Districts - Wales, are 32, 36 and 33 districts. These numbers are a reasonable number of districts. Therefore we depend on the whole population in these three areas.

It is found also that the number of the districts which are included in Non-Metropolitan Districts - England are 268 districts. This number is very high compared with other areas, so we prefer to depend on a sample

to represent the whole population in this area.

It is found that Non-Metropolitan Districts - England consist of 39 counties, each county consists of some districts, so we prefer to choose 39 districts, one district from each county, to represent the whole population in this area. The main reasons for choosing this number of districts are as follows:

1. To give each county an opportunity to be represented in the sample by choosing one district from each county.
2. The number of districts are quite near to the number of districts in the other areas.
3. The 39 districts in Non-Metropolitan Districts - England represents about 15% of the total number of districts in this area, and the researcher thinks that this percentage is good enough to represent the whole population in this area.

To choose one district from each county, the researcher started with the first county which was Avon. In this county the district was chosen randomly by using scramble numbers from 1 to 6 which represented the number of districts in this county.

By choosing one of these numbers it was found that this number was 3 which represented Kingswood. This was considered to be a starting point in choosing the sample even from the other counties. So District No. 3 in each county was chosen in the sample, with only one exception. This exception was in the Isle of Wight. This county consists of two districts. In this case we chose District No. 2 which is called South Wight, because of the absence of a third district.

Therefore, the districts which are included in the sample to represent the whole population in Non-Metropolitan Districts - England are as follows: Kingswood, North Bedfordshire, Reading, Milton Keynes, Fenland, Crewe & Nantwich, Middlesborough, North Cornwall, Carlisle, Chesterfield, Mid Devon, North Dorset, Derwentside, Hastings, Brentwood, Forest of Dean, Eastleigh, Leominster, East Hertfordshire, East Yorkshire, South Wight, Dartford, Burnley, Harborough, North Kesteven, Great Yarmouth, Kettering, Tynedale, Harrogate, Gedling, South Oxfordshire, Shrewsbury & Atcham, Taunton Deane, Lichfield, Ipswich, Guildford, Warwick, Crawley and Salisbury.

1.8.2-4 The Statistical Analysis: After choosing the independent variables which are expected to have an impact on productivity in waste collection in England and Wales, the following statistical analysis are used in each of the four areas.

The first is to measure the Pearson correlation coefficient between the independent variables and productivity. The main purpose of measuring the correlation coefficient is to test our hypothesis about the relationship between the independent variables from one side and the productivity in waste collection on the other. The value of correlation coefficient varies from zero to ± 1.

If the relationship between the two variables is a positive relationship, the value of correlation coefficient varies between zero and +1. If the relationship between the two variables is a negative relationship, the value of the correlation coefficient varies between zero and -1.

The stronger the correlation coefficient between the two variables the nearer its value is to ± 1. The weaker the correlation coefficient between the two variables the nearer its value is to zero.

The second is to build a statistical model in each area. These models are built by entering all the dependent and independent variables into the computer. It is mentioned in SPSS-X (27) that each of the independent variables has to pass a tolerance test before entering the equation. The tolerance of a variable is the proportion of its variance in the equation, and the tolerance test is the minimum tolerance the variable would have to be included in the equation. This minimum tolerance is 0.01.

It is added in SPSS-X (28) that after passing the tolerance test, the independent variables are entered into the equation one at a time. At each step, the independent variables not yet in the equation are examined for entry, and the variable with the smallest probability of F is entered into the equation. These steps continue until the last independent variable which passed the tolerance test has been entered.

The main purpose of building the statistical models is to know how satisfactory the independent variables are, to explain the variation of the productivity in waste collection in each area in England and Wales.

To find how satisfactory these variables are the researcher depended on the multiple R^2. According to Thomas (29) multiple R^2 which is called the coefficient of multiple determination measures the proportion of the total variation in a dependent variable which is explained jointly in the equation, and he adds that it is used to test the overall influence of the explanatory variables on the dependent variables.

In the same case Hey[30] adds that multiple R^2 is an indicator of how well the line fits the observations, and he adds if $R^2 = 1$ indicates a perfect fit (all the observations lie on the line); if $R^2 = 0$ indicates no fit whatsoever (a horizontal fitted line), and with values in between indicating varying degrees of goodness of fit.

So multiple R^2 in our equations tells us the total amount of variation in productivity in waste collection is explained by the variables which are included in the equation. The higher the multiple R^2 the more variation in productivity in waste collection is explained in the equation.

But we cannot use R^2 in our analysis if our observations include only a sample from the whole population, because the sample R^2 is not equal to the population R^2. In this case Cohen & Cohen[31] argue that the sample R^2 is not a good estimate of the population R^2, and they add that it is often desirable to have an estimate of the population R^2 which is more accurate than sample R^2.

The estimated population R^2 is called Adjusted R^2 ($\bar{R}^2$). $\bar{R}^2$ is smaller than sample R^2 and its value is affected by the sample size and the number of independent variables. The value of $\bar{R}^2$ is less if the number of independent variables is high and when the sample size is small, and vice versa.

From the above discussion it is shown that we can use R^2 to find out how satisfactory the equations are in London Boroughs, Metropolitan Districts and Non-Metropolitan Districts - Wales, where all of the population is used. Furthermore, we can use $\bar{R}^2$ in our analysis in Non-Metropolitan Districts - England where we used only a sample from the

whole population.

The third is to use statistical tests to find out whether the equation is statistically significant or not (by using F-test) and to find out which of the independent variables are statistically significant (by using t-test).

The levels of significancy which were used in our analysis were 95% and 99%.

The fourth is to build up a new equation to anticipate productivity in waste collection in the future. These equations are built by using only the variables which are statistically significant by 95% or by 99%.

The fifth is applied only if the equation which includes all of the variables in any area is not significant either by 95% or by 99%, and all of the variables are not significant also. This case might occur because the equation suffers from the problem of multicollinearity. Multicollinearity is defined by Kim & Kohout (32) when they note that it refers to the situation in which some or all of the independent variables are highly intercorrelated.

This means that the independent variables are highly correlated between themselves, and one of them could be expressed as a linear function of the others. In this case the regression coefficients become very sensitive to errors and so the equation becomes statistically insignificant.

To avoid this problem we have to remove the independent variables whose contributions in the equation are not significant, because of their

correlations with some other independent variables or because of some other reason. This is done by using the Stepwise program in the computer.

It is mentioned in SPSS-X (33) that this is done as follows:

1. The independent variables already in the equation are examined for removal. If the probability of F is larger than the removal criterion which is 0.10, the variable is removed.
2. The equation is recomputed again without the removed variable and the rest of the variables are examined for removal.
3. When no more independent variables need to be removed, all independent variables not in the equation are examined for entry. The variable with the smallest probability of F is entered if this value is smaller than the entry criterion which is 0.05 and the variable passes the tolerance tests which is 0.01.
4. When the variable or variables are entered into the equation, all variables in the equation are examined again for removal.
5. This process continues until no variables in the equation need to be removed and no variables not in the equation are eligible for entry, or until the maximum number of steps has been reached. The maximum number of steps in this case is twice the number of independent variables.

From the previous discussion it is found that this step is applied to build a significant equation if the previous one is not significant and the new equation is built by using the Stepwise program in the computer.

1.9 The Limitations of the Study

1. The time series study was done for only 6 years and this period of time might not be enough to make general results. This number of years was chosen because of the absence of data in 1977-78, before 1976-77 and after 1983-84. So, the researcher cannot make this study for more than 6 years which includes 1978-79, 1979-80, 1980-81, 1981-82, 1982-83 and 1983-84.

2. The measurement of productivity in the time series study does not take into account the change in quality of doing waste collection services from one year to another. The main reason for this is that the productivity in this case is measured in the whole of England and Wales which contains about 370 districts, and change in the quality of carrying out this service happens in some of these districts and not in all of them at the same time.

3. The time series study in waste collection in England and Wales is done without taking into account the change in the number of the districts which are included in Waste Collection Statistics in each year. The total number of districts are 328 in 1978-79, 342 in 1979-80, 368 in 1980-81, 370 in 1981-82, 385 in 1982-83 and 369 in 1983-84. But it is expected that the change in the number of the districts has little impact on productivity and the growth of productivity because most of the measurements in this case are relative figures and not absolute figures.

4. In making the cross section analysis the researcher does not use all of the expected variables. Some of these variables are excluded from this study because of the absence of the data, or because of other reasons. Therefore the variables which are used

in this study might be satisfactory or unsatisfactory in building statistical models in each area in England and Wales.

5. The values of some of our variables in cross section analysis are measured indirectly because of the absence of direct measurements for these variables. These values are expected to be inaccurate and this too might affect the accuracy of our results.

6. It was found that the data of one variable was not available in Waste Collection Statistics in 1983-84, and was available in the statistics of the previous year.

   In this case we preferred to use the data for 1982-83, rather than to remove this variable from our analysis. This data might be changed in 1983-84 and might affect the accuracy of our results.

1.10 The Organization of the Study

This research consists of seven chapters. The first chapter is the introduction which includes the meaning of the growth of productivity for different levels and for different people, the purposes of the study, the methodology used, the limitations and organization of the study.

The second chapter deals with the concept of the productivity, the importance of measuring it, the methods which are used on measuring it and the problems of measuring it.

The third chapter provides a summary about local government in England and Wales which includes its nature, structure, functions and the measurements of the productivity of its activities.

The fourth chapter gives some details about waste collection in England and Wales which includes the nature of waste collection, the importance of dealing with it and the methods which are used in measuring its productivity.

The fifth chapter examines the relationship between the different methods which are used in measuring the productivity in England and Wales during a period of time. This period starts in 1978-79 until 1983-84.

The sixth chapter provides some details about the productivity in waste collection in England and Wales in 1983-84. This chapter shows the independent variables, the relationships between these variables and the productivity in waste collection, how these variables are satisfactory to represent the productivity in waste collection and the equations which could be used to estimate the productivity in waste collection in England and Wales.

The seventh and last chapter of this research presents a general conclusion of the study which includes the results and recommendations of this study.

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CHAPTER II

THE CONCEPT OF PRODUCTIVITY

2 1 Introduction

Productivity as a concept differs from production. Production concerns output only while productivity concerns the relationship between output and input , therefore the growth of productivity varies from the growth of production.

The growth of production means an increase in output , while the growth of productivity means an increase in output per unit of input. In this case Thorpe points out that:

> "Productivity refers not to an increase in the outputs of a concern over a given period of time but rather to an increase in the relative output from a given input." (1)

Both production and productivity are looking to the same thing (output) but in different ways. Production is looking at it as an absolute figure while productivity is looking at it as a relative figure to one or more of the inputs of production process. Productivity is measured in the form of ratios, the output is always the numerator of these ratios.

Therefore it is expected that a kind of relationship has to be between production from one side and productivity from the other. This relationship has to be positive. which means that an increase in production has to be accompanied by an increase in productivity and the increase in productivity has to be accompanied by an increase in production and vice versa.

This relationship is always expected to be correct under one condition, which is that the other variables (inputs) have not changed. If the quantity or the quality of the inputs have changed the relationship

between production and productivity might be changed also.

For instance the growth in production is sometimes accompanied by a reduction in productivity if there is an increase in the quantity of one or more of the inputs with a higher rate than the increase in output. And the growth of productivity is sometimes accompanied by a decrease in the production (output), if there is a reduction in the quantity of one or more of its inputs with a higher rate than the growth of productivity.

The growth of productivity is more desirable than the growth of production (output) because productivity is related more to efficiency and effectiveness which will be discussed in the next part of the chapter.

2.2 The Importance of Measuring Productivity

Productivity is an important factor in measuring the employees' performance and companies' performance. This means that the growth in productivity is always due to an improvement in performance if the other variables are constant, so the words productivity and performance are often used interchangeably.

Productivity is seen as a measurement for both efficiency and effectiveness, which are defined by Du Brin (2) when he notes that efficiency refers to the amount of resources consumed to achieve its output, while effectiveness refers to goals and objectives.

From this quotation it is found that the relationship between productivity and efficiency is clear because they are both concerned with the output and input of production process and the relationship

between output and input, while the relationship between productivity and effectiveness is not so clear.

Productivity in any year has to be compared with the productivity of previous years, or by the productivity of different companies, or by the productivity standards, etc., to be seen as a measurement of effectiveness. Productivity is therefore defined as efficiency in producing goods and services in one unit of time, while it is seen as a measurement of effectiveness by comparing the current output/input with that of a previous base.

This view is supported by Balk (3) when he argues that productivity consists of two sets of relationships, the first is called efficiency and the other effectiveness. In addition, he notes that efficiency is the relationship of quantity and content of output to input, while effectiveness is the relationship of output or productivity to goals and desired standard of quantity and the content of output or productivity.

It is shown from the previous discussion that the measurement of productivity is seen as a measurement of employees' performance and companies' performance, because it is seen as a measurement of efficiency and effectiveness. But there are many other purposes for measuring productivity. These purposes are mentioned by Kendrick when he points out that:

> "The measurement of past productivity changes has value as a background for budgeting/and longer-term projections of resource requirements and costs within organizations. But I believe that productivity measurement is even more important in increasing "productivity-mindedness" and focusing management thinking on ways and means of cutting real unit costs and thus enhancing productivity advance in the future."(4)

In this quotation it is shown that the measurement of productivity is an important tool for planning and controlling. But the most important purpose for measuring productivity is to improve productivity in the future. In this case Crane (5) notes that measurement is an important factor in productivity improvement, without it it would not be clear whether productivity has indeed improved.

The measurement of productivity does not only cause a growth in productivity, because it needs some following procedures to know why productivity has increased or decreased, to choose the correct policies which are expected to cause an increase in productivity in the future. This view is supported by Joint Federal Productivity Project when they point out that:

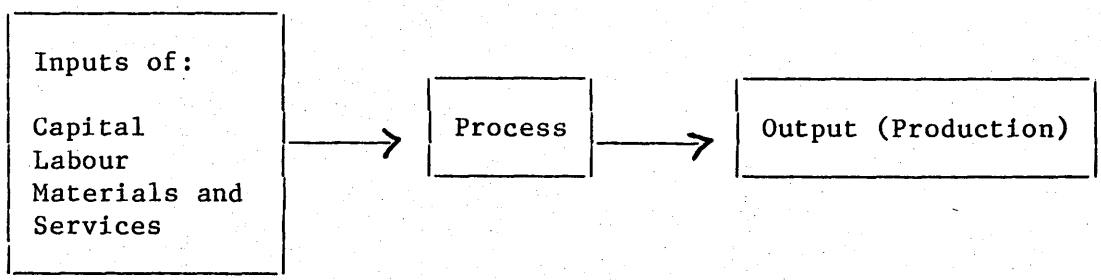
> "Productivity measurement would be rather meaningless if it consisted only of gathering statistics and adding up the results. The important questions are what do the indices reveal and what are they used for after they are developed? Explaining the cause of change - so that the future may learn from the past - may be the most valuable use of productivity measurement." (6)

It is shown in previous discussions that the measurement of productivity is very important for many reasons. Therefore the methods which are used in measuring productivity will be discussed in the following part of this chapter.

2.3 The Measurement of Productivity

The methods which are used in measuring productivity depend on the production process which is shown in Figure 2.1.

Figure 2.1 The Production Process



From this figure production could be defined as a process designed to transform a set of input elements into a specific set of output elements. Inputs are defined by the resources which are used to achieve a given purpose, and the output is defined by the level of achievement.

As mentioned before productivity concerns the relationship between output and its inputs. Therefore it is always measured in a ratio form. In this ratio the output is always the numerator while one or more of its inputs is the denominator.

As shown in Figure 2.1 the inputs of any production process are capital, labour, materials and services used. Therefore productivity is always measured by dividing the output by one or more of these variables. This view is supported by Mark when he points out that:

> "Productivity measures can be grouped into two broad classes. The first expresses productivity as the relation of output to one type of input such as labour, capital, or energy, and the second expresses productivity as the relationship of output to a combination of inputs." (7)

From the previous discussion it is found that there are many ratios which could be used in measuring productivity. The choice of one or

more than one depends on the purpose of measuring productivity. If this is to measure the total productivity the output has to be divided by (capital + labour + materials and services used). In this case James (8) notes that in the case of total productivity measurement, output is always related to all resources used - labour, capital and materials.

If the purpose is to measure the capital productivity, the output has to be divided by the capital employed. If the purpose is to measure the material productivity, the output has to be divided by the materials and services used, and if the purpose is to measure labour productivity, the output has to be divided by one of labour's aspects.

These cases are shown in the following equations:

Total productivity = output/(capital, labour, material and services)

Capital productivity = output/capital used

Material productivity = output/materials and services used

Labour productivity = output/one of labours aspects

Measuring labour productivity is the commonest form of measuring productivity. The main reasons for this are as follows:

1. Labour aspects which are the number of workers, the total workers' hours and wages and salaries, are easier to measure than the other aspects, such as capital, materials and services used.
2. Managers and employers are always anxious to measure labour productivity which means the measurement of employees' performance and the improvement of that performance from one period to another.

3 Labour productivity is always used by workers' unions in their negotiations with the government or with employers to raise wages and salaries because the improvement in labour productivity is the key element of the growth in wages and salaries.

The growth in labour productivity does not always reflect the employees' performance because growth might have occurred owing to some other variables. These are the use of more technologised machines, or the use of better quality materials and services. Therefore Eilon points out that

> "To most people 'productivity' simply means the ratio of output per man (or man-hour) but such a measure taken in isolation has the implication that labour is the only input to an industrial enterprise whereas other inputs (such as materials and capital) have in fact their contributions to make." (9)

In the same case Rees notes that

> "As is well known changes in measures of multifactor productivity reflect changes in efficiency in the use of all measured inputs rather than in the use of labor inputs alone. A measure of labor productivity can sometimes rise only because capital services or intermediate goods are being substituted for labor." (10)

Therefore labour productivity reflects only the employees' performance and the improvement of that performance if the other variables are constant. Despite the impact of the other variables on labour productivity this measurement is always used to measure the employees' performance.

Labour productivity is always measured either in physical terms or in financial terms. Some writers prefer to use physical terms and some others prefer to use financial terms. In this case McGuigan and Mayor

note that:

> "Because of the problems associated with changing price levels over time and differing supply and demand conditions in the markets for inputs and outputs, it is generally preferable to measure the variables in the production function, in so far as possible, in terms of physical units rather than monetary values." (11)

According to this quotation, the writers prefer to use physical terms in measuring productivity to avoid the changing of price levels for reasons beyond the control of the company. These reasons are the changing of inflation rate and supply and demand conditions.

In physical terms the output which is measured physically is divided by either the total number of workers or by the total man-hours. The use of physical terms is suffering from some problems. These problems are mentioned as follows:

1. This term is very difficult to apply in the companies which produce different kinds of products, because we cannot add the outputs for different kinds of products to each other (for instance we cannot add oranges to apples).
2. Even if the company produces one kind of product, we cannot use labour productivity which is measured physically for comparing the performance between different years, if there is any change in the quality of that product in these years. The quality of any product is expected to change due to the change of consumers' demand or because of new technology.
3. We cannot make comparisons between the productivity of two companies or more, unless they produce the same kind of product with the same quality.

4. The measuring of inputs in physical terms which are the total number of workers or the total man-hours does not take into account the use of different workers' skills or the change of these skills from one year to another.

As the result of these problems the financial terms are preferred to be used in measuring labour productivity. In this case the output which is measured financially (sales value of production) is divided by the total wages and salaries.

According to this term the previous problems are solved because (1) we can add the output of different kinds of products, which are measured financially, to each other, (2) we can compare productivity between different years or between different companies, even if there are different kinds of products with different qualities, and (3) wages and salaries reflect the different skills, because better worker skills mean higher wages and salaries and vice versa.

This does not mean that the financial terms in measuring productivity are a panacea. This means that although these terms are better than the physical terms, they are still suffering from some problems, which are discussed as follows.

Firstly these measurements reflect not only the employees' performance but also the impact of the other variables on productivity. The other variables, as mentioned before, are capital, materials and services used.

Capital changing means the change in technology which is used in the company. The change in technology is the most important factor which has a great impact on productivity, because this change always means a

high growth of productivity. It is expected that there is no change in technology during the short term. This view is supported by Salter & Reddaway when they point out that:

> "Once the appropriate technique has been decided and investment has taken place in the necessary equipment, the production function is no longer relevant. From then on, throughout the life of the equipment, factor substitution is of the short term variety, limited by the nature of the equipment and not by restraints of technical knowledge." (12)

Therefore during the short term and during the life of the same equipment, productivity and the growth of productivity reflect the change in the quality of materials and services used, moreover in the change in employees' performance. The impact of materials and services on productivity is declared by Dudick when he points out that:

> "Increased productivity of labor through automation sometimes results in higher unit costs for material because of the requirement for tighter material specification." (13)

It is shown in this quotation that the use of better quality materials and services has to be accompanied by an improvement in productivity. It is shown also that there is always a kind of relationship between the quality of these materials and services from one side, and their costs from the other. This means that the better quality the materials and services the more costly they are.

To avoid the impact of these materials and services on productivity, their costs have to be subtracted from the sales value of production (the numerator of labour productivity equation). Therefore, this equation will be changed as follows:

Labour productivity = (sales value - costs of materials and services used) / (total wages and salaraies)

The numerator of this equation is called the added value which is defined by Woodmansey when he notes that:

> "Added value is difference between the value of goods produced or services rendered and the cost of the material and other purchased services." (14)

Therefore the labour productivity equation is changed as follows:

Labour productivity = added value/total wages and salaries

From the previous discussion it is expected that the last equation which depends on the added value is the best equation which reflects the labour performance and the change in this performance, because it excludes the effect of the other variables on labour productivity. This view is supported by Thor when he points out that:

> "Many companies have gone beyond sales-related productivity ratios. Value-added (sales less purchased goods and services such as materials and energy) is for many purposes a better indicator of the scope of operations than is pure sales number. Value-added to labor could be a more useful productivity ratio than sales-to-labor." (15)

In the same case Wright (16) adds that the ratio of value added per £1 of labour cost is more useful in providing an indication of the use of the employees.

Secondly, despite the advantages of using value-added in measuring labour productivity, it is still suffering from the second problem. This problem is that labour productivity which is measured in financial terms is suffering from the problem of inflation. This problem will be discussed in the following part of this chapter, which is called The Impact of Inflation on Productivity.

2.4 The Impact of Inflation on Productivity

From the previous discussion it was found that the variables which are used in measuring labour productivity are: sales value, costs of materials and total wages. Each one of these variables is measured in financial terms, so they are affected by the change of monetary values as the result of inflation.

Inflation is defined by a continuous increase in an overall index of prices, so to measure the real productivity and the real growth of productivity, the impact of inflation has to be eliminated from each variable. This view is supported by Dee when he points out that:

> "Sales figures and cost of goods sold figures change with time. They change because of operations and they change because of inflation. Without the effects of inflation, all of these figures could be compared directly and a firm's growth and profitaility could be ascertained." (17)

In the same case O'Neil (18) adds that the price changes must be eliminated from the calculation for any measurement of productivity to be meaningful.

It is shown in these two quotations that each of the productivity variables has to be deflated to avoid the impact of inflation and to measure the real productivity and the real growth in productivity. To

deflate these variables we can use one or more of the price indices which are defined by Goldschmidt & Admon when they point out that

> "An index is a ratio between two measurements. A price index is a ratio between the price of an object (or a group of objects) on a given date and the price on the base date It expresses the change in the price level of the object (or group of objects) during the period in question " (19)

It is found in this quotation that the price indices express the change in price level of the object or group of objects over two years. The first year is called the base year and the second year is called the comparison year. so the price index is a ratio between the price or the prices in the comparison year and the price or the prices in the base year for one object or a group of objects, and it reflects the price levels and the changing of price levels during these two years.

Price indices are classified for two main types of indices. These two types are the general price indices and the specific price indices. The general price indices reflect the decrease in monetary values in the whole economy as a result of inflation on all goods and services.

The specific price indices reflect the change in prices in one or more of particular types of goods and services. But the change in the level of prices which is declared by using the specific price indices. does not only reflect the change in monetary values as the result of inflation but it reflects also the change in price level as the result of the change in consumer tastes, technological improvements, natural or artificial changes in the supply of particular products, and so on.

The purpose of deflating the productivity variables is to eliminate only the impact of the change in monetary values on these variables. From the previous discussion of the two types of price indices, we

notice that the general price indices are more related to this purpose than the specific price indices. Therefore, one of the general price indices has to be used to deflate each variable of the productivity variables.

This view is supported by Tamari (20) when he notes that the monetary values have to be deflated by the same indicator of inflation to be able to explain whether the changes in any ratio result from factors inherent in the firm alone or whether they are a part of general economic conditions in the economy or the industrial subsector in which the firm operates. In the same case Goldschmidt & Admon (21) add that the general price indices are the best measure of change in the purchasing power of money.

But as the result of the changing of the price level each year the general price indices have to be used after making new continuous indices by its values at the base year and multiplying by 100.

2.5 Summary and Conclusion

In this chapter it is shown that productivity and the growth of productivity are used as measurements for employees' performance and companies' performance, because they are seen as measurements for both efficiency and effectiveness. The measurement of productivity is also an important factor for the improvement of productivity in the future, if it follows a procedure to find out why productivity has increased or decreased.

Productivity is measured by dividing the output of any production process by one or more of its inputs and that depends on the purpose of study. The most common purpose in this case is to measure the

employees' performance so that the output has to be divided by one of labour aspects which are the number of workers, man-hours and wages and salaries.

Labour productivity could be measured either in physical terms or in financial terms. But the use of physical terms produces many problems, so financial terms is recommended to be used according to the following equation:

Labour productivity = value-added/total wages and salaries
where :
Added-value = sales value of production - costs of materials and services used

To measure the real productivity it is recommended that each of its variables has to be deflated by using one of the general price indices after making new continuous indices by its values at the base year and multiplying by 100.

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CHAPTER III

THE PRODUCTIVITY MEASUREMENTS OF LOCAL GOVERNMENT SERVICES IN ENGLAND AND WALES

3.1 The Nature of Local Government in the U.K.

Local government is defined as a part of the government dealing with local problems which are the results of the changing of the environmental conditions for each local government area. Each area is suffering from its own problems which might differ from the problems of other areas.

Some areas are suffering from a high level of unemployment, some from poor housing conditions, others from high population, while others are suffering from the increasing number of certain social groups such as the elderly, coloured immigrants, pre-school children and so on.

Therefore, local government areas vary not only in the numbers of problems, but also in the nature of those problems. So each local authority has to deal with its own problems which might differ from those of other areas.(1) This view is supported by Greenwood, et al, when they note that the local authority has to respond to its particular combination of environmental problems and it has to organize itself in order to handle these problems.(2) In the same case Bogdanor adds that local authorities are better placed to determine the needs of communities than central government.

The previous discussion shows that local government is able to deal with its own problems better than central government, because central government is too far removed from the local problems. So the U.K. is divided into many areas, each of which deals with its own problems by its local authorities. The local authorities in each area consist mainly of county councils and district councils, as will be shown in the following part of this chapter which is called the structure of

local government in England and Wales.

The administration of each council consists of a chairman (mayor), vice chairman (deputy mayor or alderman) and a number of councillors. Each one of these groups is elected by the communities in the area in which they are living. Therefore citizens can participate in governing themselves if they do desire and can participate in choosing their representatives (councillors) by voting in the election. In this connection Hondale points out that:

> "Local governments are alleged to be more democratic than central governments because they are better equiped to represent the needs of individuals who can participate in decision making through locally elected councillors." (3)

After electing the council members, the council has to be divided into small units. These units are called committees, departments and groups. Each unit has to make decisions on behalf of citizens. Each decision must be taken with the agreement of the majority of each unit.

From the previous discussion it is shown that the local government members in the U.K. are always elected by a democratic system and also their decisions are always taken by a democratic system. But the succession of local government system depends to a great extent on the degree of the independency of local government from central government.

In the U.K. central government can control local government activities by two methods. The first one is that central government can change local government functions through parliament. In this case Sandford notes that:

> "In a unitary state like the United Kingdom the position is different local governments derive their powers and functions from the central government which could at any time, by the ordinary process of legislation change the power of local authorities or abolish them altogether."(4)

The second one is that central government could make a limitation of local government functions, by reducing its financial support to local government activities. This financial support is called grants. Grants are paid by central government to meet the standard of living, and it is determined by taking into account the desirable level of local expenditure and the expected level of local incomes such as rents, fees, and local taxation.

It has been mentioned before that these grants represent about 50% of local government incomes. So central government could control on local government activities by reducing their grants. Grants are divided in the U.K. into two main kinds. These kinds are specific, and general grants. Specific grants are paid to support one specific service and must be spent only on this service, but general grants are paid to finance the expenditures as a whole and they are not specified for any particular service.

It is better for central government to use the specific grants if it wants to take control of local government activities, and it is better for local government to receive general grants because it gives the councillors a greater chance to use the money on a purposes they think is best for their local area.

To release the tension between local government and central government, it is better to expand the use of general grants rather than that of specific grants. Since 1958 in the U.K. the number of specific grants

has been decreased and the number of general grants has been increased.

From the previous discussion it is shown that central government in the U.K. has a great control on local government activities, through its financial support which represents about 50% of the local government income but that control started to be decreased since 1958 because of the reductions in specific grants and the increase in general grants.

3.2 The Structure of Local Government in England and Wales

The new structure of local government in England and Wales was created by a series of Acts of Parliament passed in the period 1972-74 and their associated regulations. In this new structure the public services are redistributed by removing some from local government control, a new pattern of local authority was created, and some additional institutions into the system were introduced. This new structure is shown in Figure 3.1.

This figure shows that the new structure of local government in England and Wales is divided mainly into four areas. These areas are Greater London, Metropolitan Areas - England, Non-Metropolitan Areas - England, and Non-Metropolitan Areas - Wales. It is shown too that Greater London and Metropolitan Areas - England are administered by the two tier structure, while Non-Metropolitan Areas - England and Non-Metropolitan Areas - Wales are administered by a three tier structure.

The two tier system consists of Greater London Council and London Boroughs in London, while it consists of County Councils and District Councils in Metropolitan Areas - England. The three tier system

Figure 3.1 The Structure of Local Government in England and Wales from April 1st, 1974.

Level	Greater London	England Metropolitan Areas	England Non-Metropolitan Areas	Wales Non-Metropolitan Areas
First tier	Greater London Council (1)	Metropolitan County Councils (6)	Non-Metropolitan County Councils (39)	Non-Metropolitan County Councils (8)
Second tier	Greater London Borough Councils (32 + 1)	Metropolitan District Councils (36)	Non-Metropolitan District Councils (296)	Non-Metropolitan District Councils (37)
Third tier	None	None	Parish Government	Community Government

Source: Stanyer, J., 1976, Understanding Local Government, Martin Robertson, London, p.52.

pertains moreover to Counties and Districts, Parishes in Non-Metropolitan Areas - England and Communities in Non-Metropolitan Areas - Wales.

The system is slightly different in London and Metropolitan Areas than in Non-Metropolitan Areas in England and Wales. In London the County is called the Greater London Council and the Districts are known as London Borough Councils. In Metropolitan Areas the Counties are called Metropolitan County Councils and the Districts are called Metropolitan District Councils. In Non-Metropolitan Areas in England and Wales, Counties are called Non-Metropolitan County Councils, Districts are called Non-Metropolitan District Councils, Parishes are called Non-Metropolitan Parish Councils and Communities are called Non-Metropolitan Community Councils.

The main criteria which are used in dividing these areas into four are the size of population and the divisions between rural and urban areas. The variations in the numbers of the population between these four areas at the time of introducing this new system are shown in Table 3.1.

It is seen from this table that outside London the population in the Metropolitan Areas is higher than the population in Non-Metropolitan Areas - England, which are higher than the population in Non-Metropolitan Areas - Wales.

Outside London the largest urban areas and the highest population areas are called Metropolitan Areas. These areas embrace the main industrial areas in England and Wales which contain West Midlands, Merseyside, the Manchester Area, South and West Yorkshire, and the Tyne and Wear Area. Metropolitan areas are governed by a system which is very similar to the

Table 3.1 Population Ranges of Each Type of Authority in England and Wales in 1973.

Type of Authority	Lowest Population	Highest Population
Metropolitan Counties	1,198,380 (Tyne and Wear)	2,785,640 (West Midlands)
Non-Metropolitan Counties - England	109,680 (Isle of Wight)	1,434,960 (Kent)
Non-Metropolitan Counties - Wales	98,370 (Pawys)	536,080 (Mid Glamorgan)
London Boroughs	138,620 (Kingston-upon-Thames)	332,880 (Croydon)
Metropolitan Districts	172,990 (South Tyneside)	1,087,660 (Birmingham)
Non-Metropolitan Districts - England	24,060 (Teeside)	421,800 (Avon)
Non-Metropolitan Districts - Wales	18,670 (Radnor)	285,760 (Cardiff)

Source: Seeley, I.H., 1978, Local Government Explained, The Macmillan Press, London, p.34.

Note: The data which is mentioned in this table was taken from NALGO Education Department.

local government system, because they are highly urbanized areas and highly populated areas.

Non-Metropolitan Areas in England and Wales are very similar to each other because both consist of urban and rural areas and their populations are less than the population of Metropolitan Areas. The only difference between them is that the size of the population in England is higher than the size of the population in Wales.

The urban areas in Non-Metropolitan Areas in England and Wales are administered by District Councils while the rural areas are directed by Parishes in England and Communities in Wales. These Parishes and Communities are found outside the larger towns and major urban areas. The Parishes and Communities are administered by elected councils if the population is more than 300 persons, but they are directed by Parish meetings or Community meetings if the population is less than 300.

From the previous discussion it is shown that London and Metropolitan Areas are conducted by the two-tier system, while Non-Metropolitan Areas in England and Wales are conducted by the three-tier system. So the success or failure of this system depends mainly on the relationship between the upper level and lower level of the system.

The third-tier system in England and Wales which is Parishes and Communities is not very common, so most of the writers talk about the relationship between the two-tier system by setting down the third-tier system. In this case Keith-Lucas & Richards point out that :

> "The success of a two-tier system would depend upon good relations between counties and districts. The basic difficulty surrounding a two-tier arrangement is the possibility of friction and rivalry between the two levels. Decisions have to be made about who is responsible for what."(5)

The above quotation declares that the friction between the two levels happens only if the functions of each level are not clear. Some of the local government functions in England and Wales are conducted completely by the Counties, some others are conducted completely by the Districts and some others by the sharing of Counties and Districts. When the functions are conducted by the sharing of the upper and lower level, there is always friction between the two levels because in this

case no one knows who is responsible for what.

The functions of local government in England and Wales and the responsibility of these functions will be shown in the next part of this chapter.

3.3 The Local Government Functions in England and Wales

Local government in the U.K. and also in England and Wales is a multi-purpose activity. Every local government has many jobs to do and a variety of services to provide. Therefore, Stewart points out that :

> "The local authority is or can be the main instrument of urban management. Our cities and towns can today be regarded as in part the creation of the local authority. The local authority may own a third of property, may have built a third of the buildings; it will have built the road system and allocated the land. It educates the children and deals with the problems of the elderly, handicapped and deprived. It licences, it approves, it controls, it governs many activities."(6)

The above quotation declares that local government in the U.K. carries out many activities, therefore it plays a big part in the U.K. economy. This view is supported by Sandford when he notes that:

> "Local government is big business. In 1982, on current and capital account together, local government collectively spent over £33,000 million, serviced a capital debt of some £36,000 million and employed 3 million persons. Local authorities, individually, are amongst the biggest landlords and landowners in the country."(7)

The previous discussion shows that local government in the U.K. plays a great part in the economy by dealing with many different functions. These functions are divided into many divisions. Each division depends on the criterion which the writer used in dividing these functions and what he is looking for in these functions.

For instance, Byrne (8) divides these functions into five categories. These categories are protective, environmental, personal, amenity and trading services. And he notes that protective services seek to protect people from various dangers and it includes police, fire, consumer protection and diseases of animals and licensing.

In addition to this he adds that environmental services control and improve the physical environment and it includes environmental health, highways, traffic and transport, planning and emergencies. Furthermore, he adds that personal services seek to enhance personal welfare, which includes education, careers, personal social services and housing.

Moreover, he adds that amenity services provide leisure time for citizens; this includes sports facilities, museums, galleries, theatres and camp sites.

Finally he adds that trading services are the services for which the local authorities make commercial charges, which include markets, transport facilities and small holdings.

In the same case Richards (9) classified the local government functions into four groups. These groups are (1) protective services, which protect people from various dangers by providing fire brigades, police forces, main drainage systems, refuse removal, food inspectors, weights and measures inspectors and the licensing of public premises, (2) communal services which provide benefits for all such as the provision of roads, street lighting, planning and leisure services, (3) personal services which gives direct assistance to individuals, such as education and welfare services, and (4) trading services which includes

public transport facilities and airports.

From the previous classifications for local government functions by Byrne and Richards, we can note that there are some differences between the main classifications and there are some differences in the functions which are included in each group. The same thing will happen again if the classification of any other writer is taken, so the researcher prefers to depend on the official classification for local government functions in England and Wales.

This official classification is mentioned in the Department of the Environment Welsh Office (10). In this Department local government functions in England and Wales are classified mainly into seven groups. The first group is education and libraries etc. This group includes education, library service and museums and art galleries. The second group is health and social services, which includes part health and personal social services.

The third group is law, order and protective services, which includes police, fire, administration of justice and civil defence. The fourth group is local transport which includes public passenger transport and highways and other transport. The fifth group is housing which includes advances under housing and SDA Acts and other housing.

The sixth group is employment, which includes careers service administration and sheltered employment and workers. The seventh group is local environment services which includes refuse collection, refuse disposal, recreation, parking and swimming baths, environmental health, general administration, town and county planning, agriculture and fisheries, cemeteries and crematoria, consumer protection and

miscellaneous services.

These functions are carried out by counties or districts or both, by setting aside the minor authorities - the Parishes in England and Communities in Wales - as mentioned before. So the local government functions in England and Wales are carried out by Greater London Council and/or London Boroughs, Metropolitan County Councils and/or Metropolitan District Councils, and Non-Metropolitan County Councils and/or Non-Metropolitan District Councils.

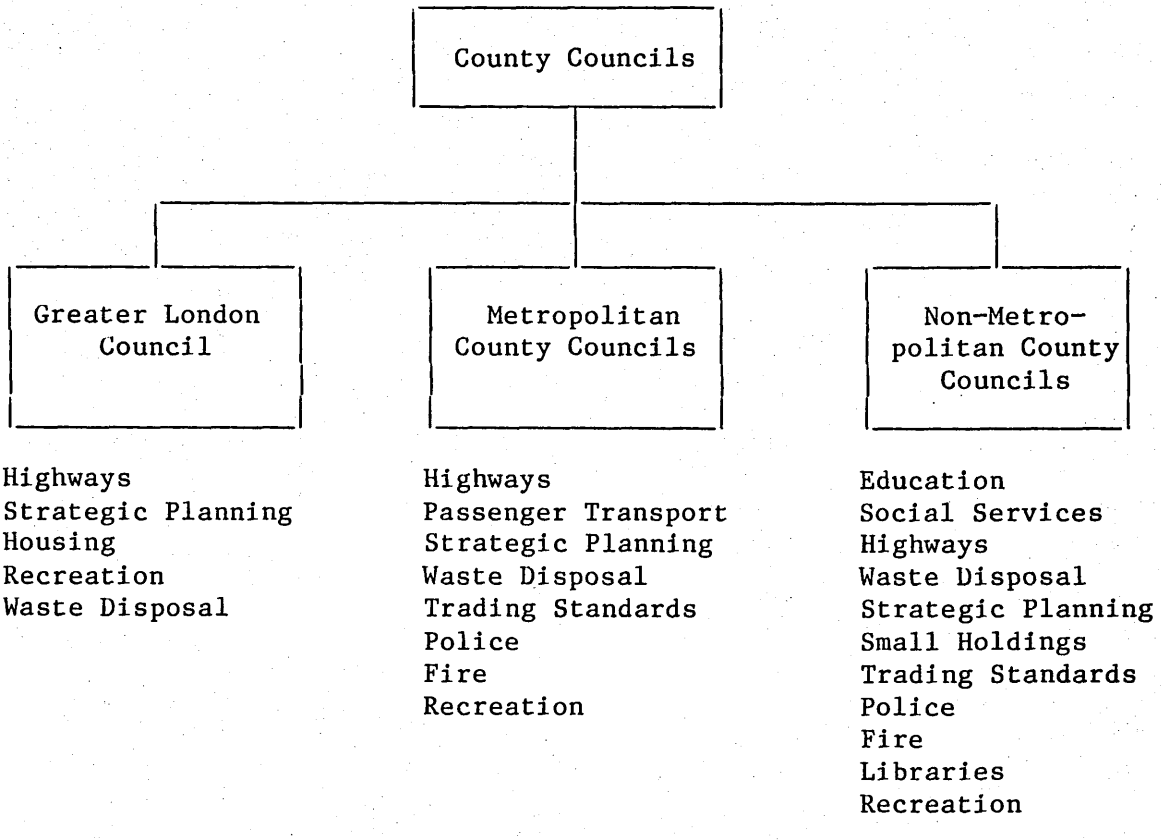
These functions are distributed between Counties and Councils according to many bases. The first base is that of the expense of the service. According to that basic the more expensive the service the more need for the authorities with greater financial resources. So the more expensive services need to be carried out by the Counties.

The second base is the uniformity of the service and the need for more control by central government. In this case the service has to be conducted by the County rather than the District. The police is an obvious example of this kind of service.

The third base is the relationship between the service and local environment. If this relationship is very high, the service has to be done by the Districts and not by the Counties. These kinds of activities are such as housing and local amenities.

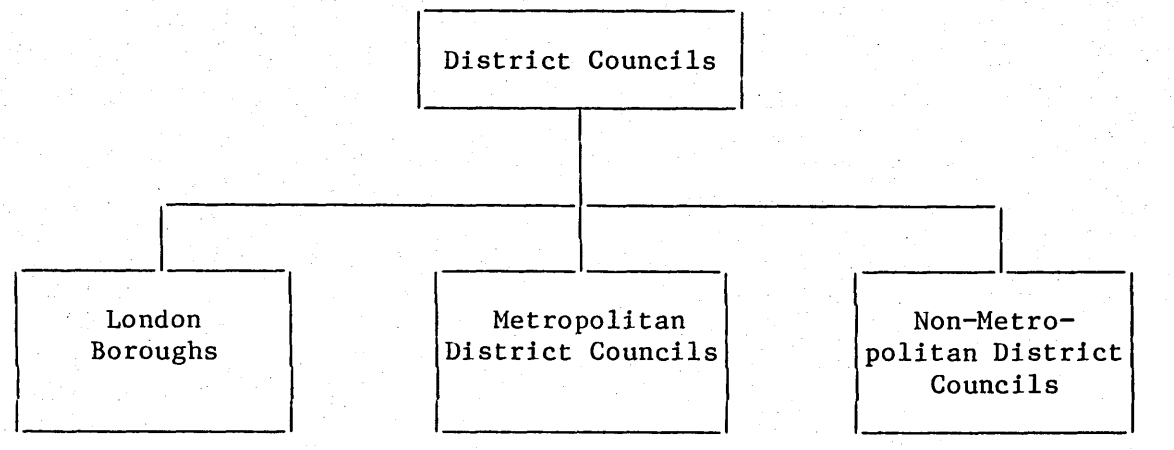
As the result of applying the previous basis in England and Wales, the functions are distributed between Counties and Districts as shown in the following figures 3.2 and 3.3.

Figure 3.2 The Functions of the County Councils in England and Wales from April 1st, 1974.



Source: Jefferies, R., 1982, Tackling the Town Hall - A Local Authority Handbook, Routledge & Kegan Paul, London, p.5 and pp.270-83.

Figure 3.3 The Functions of the District Councils in England and Wales from April 1st, 1974.



London Boroughs	Metropolitan District Councils	Non-Metropolitan District Councils
Education (except in Inner London)	Education	Housing
Housing	Social Services	Environmental Health
Social Services	Housing	Planning
Trading Standards	Environmental Health	Recreation
Environmental Health	Planning	Waste Collection
Planning	Libraries	
Libraries	Recreation	
Recreation	Waste Collection	
Waste Collection		

Source: Jefferies, R., 1982, Tackling the Town Hall - A Local Athority Handbook, Routledge & Kegan Paul, London, p.5 and pp.270-83.

It is shown in Figures 3.2 and 3.3 that there are many differences in distributing the functions between Counties and Districts in the four areas. For instance, we notice in London that London Boroughs (Districts) are doing most of local government functions, while the Greater London (County) is carrying out just a few local government functions.

Inversely, in Non-Metropolitan Areas in England and Wales most local government functions are carried out by the Counties and fewer numbers of functions are carried out by the Districts. In Metropolitan Areas local government functions which are conducted by the Counties are almost equal to local government functions which are conducted by the Districts.

It is shown too in Figures 3.2 and 3.3 that some local government functions in England and Wales are carried out either by the County Councils, such as highways or by the District Councils, such as environmental health and there are some other functions which are conducted by the sharing between Counties and Districts, such as planning and recreation. These functions which are carried out by the sharing of Counties and Districts are always in need of high co-operation between the two authorities to avoid the duplication of expensive services.

These services which are carried out by Counties or by Districts or both are always looking to different Government Departments for guidance, advice or direction. In this connection Jefferies points out that :

> "The police look to the Home Office, education to the Department of Education and Science, trading standards to the Department of Trade, highways to the Department of Transport, planning to the Department of Environment."(11)

So the local authorities carry out local government functions in the U.K. and also in England and Wales with the assistance of central government through its departments.

These functions vary over time, either in the allocation of new activities such as consumer protection services, or because of transferring the function to other bodies such as the transferring of the water supply to the new water authorities.

3.4 Measuring the Productivity of Local Government Functions in England and Wales

It was shown in the previous chapter that it is important to measure productivity because measuring productivity is seen as a measurement of efficiency and effectiveness. The measurement of productivity could bring about the improvement in productivity if it is followed by procedures to find out why productivity has increased or decreased.

It was shown too in the previous chapter that productivity is measured mainly by two terms. These terms are physical and financial. It is recommended that using financial terms is better in measuring productivity rather than physical terms, because in many cases physical terms are very difficult to be applied.

But the measurement of productivity in financial terms depends mainly on the sales value of the output, while the outputs of local government functions in the U.K., and in England and Wales are mostly not for

sale. Local government provides these services mostly free of charge or with a very small charge compared to its cost. In this case Hamblin & Adams point out that:

> "The local authority is not selling the service to the consumer at all. Although the customer pays for the service through rates and taxes, the level of payment by an individual consumer is unrelated to the level of consumption."(12)

In the same case Byrne (13) notes that the fees for local government services often take into account the individuals' ability to pay, but seldom covers its full cost. Hepworth (14) adds that some of the charges are to prevent the abuse of the services and at the same time not to prevent those who need the service from receiving it.

From the above quotations it is shown that local government services are provided for the people in the U.K. and also in England and Wales, may be free of charge or with a very low charge compared to its cost. The main reason for this is not to prevent the person who needs the service from receiving it. It is shown too that the local government services are financed mainly by rates and taxes which are not related to the level of the service.

Therefore the sales value cannot be used in measuring the productivity in local government activities, and the only method which can be used in measuring the productivity in financial terms is the cost value for the output of local government activities.

But even costs cannot be used to give a satisfactory measurement for productivity and the growth in productivity in local government activities, because costs in this case are expected to be uneconomic as

the result of the expected inefficiency in local government activities as it is a part of the public sector, for the reasons which are mentioned in the first chapter of this research. These reasons are such as the lack of competition, goals, control, and so on.

It was found in the previous discussion that we cannot use either the sales value or the costs in making a satisfactory measurement of productivity in local government activities. Therefore, we have to depend on physical terms in measuring productivity in this case.

Productivity in physical terms is measured by dividing the output of the production process by its input, by measuring both the output and input in physical terms. Input is mostly measured physically by the number of workers or by the number of man-hours, and there is no problem whatsoever in measuring these variables.

The problem appears to be in measuring the output of local government activities in physical terms, because the output of local government activities, as it is a part of the public sector, has tangible and intangible characteristics, as mentioned before. As the result of this it is found that the measurement of output of local government activities is judgemental. This means that there is no single quantitative measure of the output of their activities because of the absence of a direct quantifiable entity which describes a unit of their services.

In this case Ardolini & Hohenstein point out that :

> "It is often difficult to define and quantify the outputs of government organizations since they usually do not produce clearly specified physical products such as those in the goods-producing sectors of the private economy."(15)

This quotation shows that it is difficult to measure the output of the government sector and also on the local government activities, because of the absence of the clear physical products as in the private sector.

Furthermore, it is difficult to take into account the changing of the qualities in measuring the output of local government services. The importance and the difficulty of measuring the qualities of the output

of local government services are mentioned by Ross & Burkhead when they note that :

> "Without a direct price, holding quality constant or making the necessary adjustments to correct for quality changes becomes very complex. Yet without the necessary quality adjustments, estimates of quantity changes can be very misleading."(16)

It is shown in the above quotation that it is difficult to measure the quality of local government services, and without taking the quality into account the measurement of the output of these services is meaningless.

But there is no one measurement which takes into account the quantity and quality of the output of local government activities. Thus we cannot use only one measurement in this case, actually we need far more than one measurement to give enough information on the quantity and quality of doing these services. This view is supported by Hatry when he points out that :

> "It is becoming apparent that the complexities of government services require multiple productivity measurements for each service in order to provide a comprehensive perspective on how productivity is progressing. Seldom does a single measure capture enough information to provide government officials or the public with a satisfactory perspective."(17)

It is mentioned in this quotation that we need to use more than one measurement for the output of local government activities to give enough information to the people who are interested in this area. To declare this view we have to discuss how to measure the output of some of the local government activities in England and Wales. For example what are the outputs of the following services - education, police, housing, fire control, street lighting, courts, recreation, public libraries, transportation, street maintenance and street parking?

The output of education services could be measured by pupil-days and by the number of pupils. But these measurements are not enough to measure how successful the education system is, because the usefulness of the education system differs from one pupil to another. Therefore we have to use some additional measurements which can be used to measure the usefulness of the education system.

These additional measurements are : (1) the number of hours spent in the class, (2) the amount of material covered in those hours, (3) teacher-pupil ratios, (4) the availability of well-trained teachers, (5) the number of pupils who reach a certain standard of education, (6) the examination successes and the standard of these successes, (7) continuation or drop-out rates in the education system, (8) the expected increase in the pupil's future productivity, and (9) the expected increase in the pupil's future income.

We can measure the output of police services by the number of observation-hours, calls, crimes investigated and the number of arrests. But these measurements do not give any indication of the standard, purpose, or effectiveness of doing these services. So we

have to use some additional measurements to gauge the quality of these services.

These additional measurements are: (1) crime rates and the changes in crime rates, (2) the average seriousness of crimes, (3) the losses due to crimes, (4) the number and rate of persons physically injured or killed in crimes, (5) the number and the percentage of arrests which lead to convictions, (6) population serviced per policeman, (7) the response time of calls, (8) number of reported incidents or complaints of police misbehaviour, and (9) the citizen's feeling of security.

The output of housing services is measured by the number of new houses built to a certain standard within a given period of time. But this measurement does not take into account the other activities in the same aspect such as building houses of a lesser standard or the patching up of old property, or giving loans or mortgages to council tenants and people on the housing list to enable them to buy private houses. Therefore, we must use some other measurements.

These measurements are: (1) the number of people who are registered in the housing list, (2) the change in the number of those people, (3) response time for the people in the housing list to get new houses, (4) the number of families who are newly housed, (5) the number of people who are given loans and mortgages to buy private houses, and (6) the change in the number of people who are given loans and mortgages to buy private houses.

The output of fire control is measured by the number of fire calls and the number of inspections. But to measure the quality of carrying out these services we have to use some other measurements.

These other measurements are : (1) the number of fires and the change in these numbers, (2) the average seriousness of fires, (3) the losses due to fires, (4) the injuries and lives lost in these fires, (5) the response time for fire calls, (6) population served per fire-fighter, (7) the availability of special equipment (e.g. fire boats, helicopters), (8) the number of fire stations, (9) the average number of crew per vehicle, and (10) the number and type of fire vehicles.

The output of street lighting is measured by using the number of acres which are covered by the lighting system, and by the change in this number over a period of time. But these measurements do not give any indication about the impact of the lighting system in society. This impact is measured by using some additional measurements.

These additional measurements are (1) the change in accident rates, because it is expected that this rate in lighted streets is less than than in non-lighted streets, (2) change in burglary rates because it is expected that this rate in lighted streets is less than that in non-lighted streets, and (3) the people's feeling of satisfaction in this service.

The output of courts activities is measured by using the number of cases resolved. But this measurement does not measure the quality of these activities, so we need to use some additional measurements in this case.

These additional measurements are : (1) the delay time until resolution, (2) the correctness of disposition, (3) the number of convictions, and (4) the number of plea-bargain reduced sentences.

We can measure the output of recreation activities by using the number of acres used for recreational activities and the number of those attending recreational areas. But we need to use some additional measurements to measure the quality of these activities.

These additional measurements are : (1) the number of different activities, facilities or features available, (2) the amount of recreation staff time spent on recreational programs or services, the conditions of the lawns, buildings, play areas, and other functional areas, (4) the citizen's perceptions of adequacy of recreational opportunities, (5) the crowdedness indices, and (6) the participant hours for each of the major activities or facilities.

The output of public library could be measured by the total number of attendance, staff, books or items circulated. To measure the quality and effectiveness of public library services we have to use some additional measurements.

These measurements are : (1) the library's selection of books, (2) comfort, cleanliness, temperature, ventilation, crowdedness and noise in the library, (3) availability of reading room facilities, (4) availability of reference services, (5) staff's help to those who are using the available facilities, and (6) the percentage of attendance to the whole population.

The output of transportation services could be measured by miles of roadway, number of vehicles, seating capacities, miles of road surface constructed, number of street signs installed, and traffic volume in various routes. The quality of these services is measured by using the following measurements. These are : (1) travel time between major

destinations, (2) duration of congestion, (3) convenience, comfort, safety, economy and maintenance of a habitable environment of the transportation vehicles, (4) adequacy of transportation vehicles, (5) satisfaction among citizens with the adequacy of these vehicles, (6) number of accidents, injuries and deaths related to the transportation system, and (7) the losses due to traffic accidents.

The output of street maintenance is measured by using the square yards of repairs made. To measure the effectiveness and quality of this service, we can use some other measurements.

These measurements are : (1) change in traffic flow, (2) change in accident rates, (3) smoothness and bumpiness of streets, (4) the change in travel times, (5) dust and noise during repairs, and (6) change in density of traffic.

The output of street parking could be measured by the total capacity of these areas. The quality of these services is measured by the following measurements. These are : (1) average occupancy as a ratio of total capacity, (2) changes in parking offences, and (3) improvement in traffic flow.

3.5 Additional Measurements of Productivity in Local Government Functions in England and Wales

It was shown in the previous part of this chapter that we have to use many measurements to measure the productivity in local government activities in physical terms.

But the use of these measurements does not give enough indications for productivity and its growth for the different groups who are interested

in this area. These groups are, as mentioned before, central government, taxpayers, consumers, voters, councillors, workers and their unions.

Each one of these groups is looking to the growth in productivity in local government activities from different viewpoint. Central government, tax payers, consumers, voters and councillors are looking to the growth in productivity because it could mean the reduction in costs per unit of output, while the workers and their unions are looking to that growth from the viewpoint of its impact on wages and salaries and on the number of unemployed people.

Therefore it is recommended to use some other methods in measuring productivity, in addition to the physical terms. These methods are : (1) costs per unit of output, (2) wages and salaries, and (3) the number of unemployed people.

3.6 Summary and Conclusion

It was found in this chapter that local government in England and Wales is carrying out many different activities. These activities are divided officially into seven categories. These are : (1) education and libraries etc., (2) health and social services, (3) law, order and protective services, (4) local transport, (5) housing, (6) employment, and (7) local environment services.

Some of these activities are carried out by the Counties, some others are carried out by the Districts, and some others by sharing between the Counties and Districts.

It is important to measure the productivity of local government activities, as well as the other activities, because measuring the productivity is seen as a measurement of efficiency and effectiveness for any activity. Furthermore, measuring productivity is important to find out the increase or decrease in productivity which might help in improving productivity in the near future.

We cannot measure the productivity in local government activities financially, because we cannot use either the sales value or the costs in measuring their output. We cannot use the sales value because most of local government services in England and Wales may be provided to the customers free of charge or with a very small charge compared with its costs.

We cannot use the costs, too, in measuring the outputs of local government activities in England and Wales, because it is expected that the costs of these activities are uneconomic costs as the result of the lack of competition, ownership, and so on.

So it was found that it is better to measure the output in local government activities in England and Wales physically, which is measured by dividing the output (in physical terms) by the input (in physical terms). But even in this case it is found that we have to use many measurements for the outputs, to give enough information for the quantity and quality of the output of any of the local government activities.

Additionally, it was found that these measurements do not give enough indication for productivity and its growth for the different groups who are interested in this area. Therefore, it is recommended to use the

following measurements, in addition to the previous ones. These measurements are : (1) costs per unit of output, (2) wages and salaries, and (3) the number of unemployed people.

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CHAPTER IV

THE PRODUCTIVITY MEASUREMENTS IN WASTE COLLECTION IN ENGLAND AND WALES

4.1 Introduction

The services of local government in England and Wales are divided officially as mentioned before into seven categories. These categories are: (1) education and libraries etc., (2) health and social services, (3) law, order and protective services, (4) local transport, (5) housing, (6) employment, and (7) local environment services.

It is mentioned too that local environment services contain ten functions. These functions are: (1) refuse collection, (2) refuse disposal, (3) recreation, parking and swimming baths, (4) environmental health, (5) general administration, (6) town and county planning, (7) agriculture and fisheries, (8) cemetries and cremetoria, (9) consumer protection, and (10) miscellaneous services.

Waste collection is one of the local government functions which aims to promote health by providing an environment free from the hazards and unpleasantness of uncollected waste, and to reduce the amount of inconvenience and danger to residents and businesses in handling and disposing of their waste.

In the following parts of this chapter the researcher will discuss the nature of this activity, the purposes of dealing with it, and how to measure its productivity.

4.2 The Nature of Waste Collection Activities in England and Wales

4.2.1 The Contents of Waste: According to Goddard (1) waste is material which has a low or no economic value (useful value). In the same case Savas adds that:

> "Solid waste consists of discarded solid materials resulting from domestic and community activities and from industrial, commercial, and agricultural operations."(2)

In the same connection Bond & Straub note that:

> "The term 'solid waste' means garbage, refuse and other discarded solid waste materials resulting from industrial, commercial, and agricultural operations, and from community activities."(3)

From the previous quotations we note that waste consists of low value materials which result from community, industrial, agricultural and commercial activities. We also note that these low value materials consist of garbage, refuse and others (rubbish).

Garbage refers to waste which is produced during the preparation, cooking, or storage of meat, fruit, vegetables, etc. and it refers to waste which is produced from handling, storage and sale of food.

Refuse consists mainly of sweepings, dirt, leaves, catch basin dirt, contents of litter receptacles, bird excreta, dead animals, and unwanted cars and trucks left on public property.

Rubbish refers mainly to paper, cartons, boxes, barrels, wood, tree branches, yard trimmings, wood furniture, bedding, dunnage, metal, tin cans, metal furniture, glass, crockery and minerals.

4.2.2 The Purposes of Collecting and Disposing of Waste: Different kinds of waste have to be collected and disposed of in a manner so that the public health of the community is protected. This requires the following three duties: (1) waste must be stored so that odour cannot escape, insects and animals cannot have access to the waste, (2) it must be collected and transported so as to cause no unsightly

appearance or disagreeable odour, and (3) waste must be disposed of so that flies and insects cannot feed on the refuse, odours are not disseminated and dust and papers are not thrown around.

In rural areas the citizens are mostly responsible for carrying out these three duties. They sometimes collect their waste and set fire to it. But dealing with it in this manner may have a bad effect on health and it could be the cause of some dangerous fires and smog conditions.

So as the result of the increase in population and increase in urbanization, collecting and disposing of waste has been transferred to larger units (local authorities in England and Wales). These units have facilities and equipment to deal with these two jobs much better than the citizens.

These jobs are highly related to urbanization and population. In this case Kimper & Quigly (4) note that as populations have shifted from rural to urban areas, the demand for collection has increased. In the same case McFarland, et. al. (5) add that it would be expected that as urbanization increases the quantity of solid waste also increases.

From the previous discussion it is shown that the local authorities in England and Wales are carrying out the two jobs which are related to population and urbanization for the following two reasons.

Firstly: the relationship between these jobs and public health. In this case McFarland, et. al. point out that :

> "The problem in public health has been and continues to be an identifying and controlling the conditions under which flies, mosquitoes, rodents and other vectors of disease are sustained by refuse in the household, the collection system, or disposal procedure."(6)

In the same case Blair, et. al., note that the main purpose of waste collection is promoting the health, safety and aesthetics of the community by providing an environment free from the hazards and unpleasantness of uncollected waste.

Secondly: to protect the community from the hazards which happen if people collect and dispose of their waste (fires and smog conditions).

4.2.3 The Relationship Between Collecting and Disposing of Waste in England and Wales: From the previous discussion, it was found that there are two main tasks which have to be done in dealing with waste. These are collecting and disposing of waste. It is found too that these jobs are highly related to each other and the functions of dealing with any one job influences the functions of dealing with the other. So it is expected that both jobs should be carried out by the same authority.

But by looking at local government functions in England and Wales which were mentioned in Figures 3.2 and 3.3, we notice that waste collection is carried out by the Districts, while waste disposal is conducted by the Counties after the new Act of 1972 which came into operation in April 1974. In this case Richards points out that :

> "The task of dealing with refuse split between the two tiers of authorities by the 1972 Act. Districts collected unwanted matter; counties dispose of it. Previously refuse had been wholly a district concern as a part of their responsibility for environmental health."(8)

From this quotation it is shown that waste collection and waste disposal were conducted by the District Councils, and waste disposal transferred to County Councils by the new Act. As the result of this

waste collection stayed under the responsibility of the first tier system while waste disposal came under the responsibility of the second tier system.

The main reasons for transferring the disposal units to County Councils are as follows: (1) the County Councils have greater financial resources which enable them to use more sophisticated techniques of destruction and to promote the recycling of material, and (2) the County Councils are planning for all their districts, so the number of disposal units could be reduced by using one unit for more than one district.

In spite of the advantages of the new system, some problems could be created because of the relationship between these two jobs. So the success or failure of the new system depends, to a great extent, on the co-operation between the two levels of authorities. If they are highly co-operative with each other, it is expecxted that this new system will succeed, and vice versa.

For instance, at the beginning of the new system the County Councils were suffering from the lack of experience in dealing with waste disposal activities, so the District Councils had to help them, at least for a few years after the new Act.

4.2.4 Waste Collection Operations: There are three jobs which have to be done to collect waste. These jobs are mentioned by McFarland, et. al., when they note that :

> "The job of solid waste collection requires three specific activities: (1) the truck has to be driven, (2) the solid waste material must be picked up from residential containers and carried to the bin of the collection compaction vehicle, and (3) the gears that activate the compaction process have to be operated to compact the material when the hopper in the truck is full."(9)

From this quotation it is clear that collecting waste needs two kinds of workers. These workers are driver and collector or collectors. The driver's job is to drive the vehicle with the exception of very heavy stops at which he will temporarily become a collector.

The collector is doing mainly two jobs. The first one is to carry the dustbin, empty it into the vehicle, and return it back to its place. The second one is to compact the material when the hopper in the truck becomes full.

The number of collectors varies between one vehicle and another, and this depends on many variables. These variables are : (1) the capacity of the vehicle, (2) the kind of vehicle, is it a highly technologised vehicle ? , (3) the density of population, i.e. is it a low or high residential area, (4) the frequency of collection, is it once or twice a week, (5) the method of collection, is it a kerbside system or backdoor system, etc. These jobs which are done by the driver and collectors could be divided into two units of operations. These units are collection and haul.

The collection unit starts when the vehicle leaves the garage in the early morning with its crew and goes to the first container on the route. Then the collectors come down and carry the containers, empty them into the vehicle and return them back. The collectors then go up beside the driver to the second point on their route. This job is

always done in the following points on their route, stopping only when the route ends or the vehicle is full. In these two cases the collectors always compact the material before the start of the second unit of operation.

The second unit of the operation is called the haul unit. This unit contains the departure of the vehicle from the last point of collection till the disposal site to dump its load and return back to its route or to the garage.

In this unit of operation some of the collectors go with the driver to help him in dumping the load, and the others wait at the last point of collection to complete the route or if it is the last point of their route they can go home.

4.3 The Importance of Waste Collection in England and Wales

Despite the low cost of this service compared with other local government services in England and Wales, as mentioned before, it was chosen to be studied in this research for two main purposes. These purposes are divided mainly into general and specific.

The general purposes are related to the political visibility of this service, while the specific purposes are related to the main subject of this research (productivity). These purposes will be discussed in detail in this part as follows.

Firstly: The general purposes for studying this service are: (1) Waste collection has a political visibility from the viewpoint of consumers and councillors, maybe more than the visibility of the other local government activities which are more costly.

The main reason for this visibility is that the disruption of carrying out this activity even for a short time could cause many problems. These problems are (1) bins become heavier (2) collection vehicles fill more quickly, (3) rubbish may fall out of bins, (4) the town seems dirtier, and (5) this could cause more vermin, worms, insects and bring more disease.

The number of citizens who suffer from these kinds of problems are much higher than the number of citizens who suffer from the problems which occur because of the disruption or the lack of conducting most other local government activities. This means that the political visibility of this activity is more than the visibility of most other local government activities.

So the councillors have to be sure of the continuity, regularity and stability of carrying out this activity, because if it is done imperfectly it has a bad reaction on their political future. This view is supported by Savas & Stevens when they point out that :

> "While waste collection and disposal do not share the life saving characteristics of the local emergency - police, fire, and ambulance - they have even higher political visibility because garbage requires conscious action every day by every family, and if service is unsatisfactory the fact is quickly evident."(10)

(2) This activity has its <u>special political visibility</u> in the U.K. and England and Wales, because waste collection is one of local government activities which is included in the 'privatization programme' started at the beginning of Mrs. Thatcher's Government in 1979. So Harbury & Lipsey (11) note that privatization is a word that has crept into our language in order to describe the policies of the Conservative Government which took office in 1979.

The main purpose of applying this programme in the public sector activities in the U.K. and also in England and Wales, is to improve their productivity, by trying to avoid one problem or more which causes the inefficiency in the public sector. The privatization policies which are used in each activity differ from that of the other activities, and this depends on the nature of each activity, its financial resources, its problems, and so on.

These policies are divided by Heald (12) into four policies. These are: (1) privatizing the financing of the service which continues to be produced by local authorities (charges), (2) privatizing the production of the service which continues to be financed by the local government out of taxation and rates (contracting out), (3) denationalisation which means selling off public enterprises and transferring its functions to the private sector, and (4) liberalization which means the relaxation of any statutory monopolies or licensing arrangements which prevent private sectors from entering markets previously supplied by the public sector (open competition).

The policy which is used to privatize waste collection activities in the U.K. and also in England and Wales, is the second policy which is called contracting out which means that local government allows for one or more big private company to provide this service for the Districts for several years. According to this system local government opens up bidding to private companies who can manage to provide the service under local government conditions.

The bidders have to demonstrate that they can meet the requirements of doing this service, which means they have to declare the value of their equipment, money, assets and workers. By the end of this bidding local

government people issue one contract or more for one company or more, to carry out this service in the District for one year or more. They always choose the company or companies which can do this job for the lowest price or prices with the standard asked for by local government.

In these contracts local government has to define exactly the job to be done in terms of the frequency of collection, number of containers, the type, size and number of vehicles to be used. It has to be mentioned in the contract, also, that local government has the right to use one inspector or more, to follow up the private company's work. The main job for these inspectors is to be sure that the companies are doing their job as mentioned in the contract.

The inspectors' job is to monitor the work performed, following up citizens' complaints, and even to recommend the breaking of the contract if they find that the job is not carried out by what is laid down in the contract, and if there are always complaints about their work.

The application of this policy has its advantages and at the same time it has its disadvantages. The advantages are because waste collection according to contracting out system is supplied by private sector companies which are expected to be more efficient than local government because of the following reasons: (1) these companies are free from political influence in the management and operation of waste collection, (2) they have the motive to improve their productivity and so their profits, and (3) with the fear of losing the contract at the next bidding, the contractor tries to supply this service efficiently and with the best quality according to the contract.

Furthermore, this system is keeping some local government advantages. These are (1) there is always one company or perhaps a bit more, which provides this service in each District. Even if there are a few companies, the District is divided into few parts, each part is conducted by one company. So these companies are always utilised from the economies of scale and contiguity, as well as local authorities, (2) waste collection according to this system is sponsored by local government out of taxes and rates. Therefore, there is no additional work or additional cost to levy charges from the customers, and (3) this system does not prevent any person who wants this service from receiving it.

The disadvantages of applying this system are as follows. The first one is that the application of this system requires some additional costs for the companies and for local government. The companies pay taxes and are looking to achieving profits, while the local government has to pay some costs to manage the contract and to monitor the performance of the contractor.

These additional costs can increase the total costs of carrying out this service. But it is expected that this additional cost can be covered by the reductions which are made as the result of the improvement in the efficiency of the service by contracting out rather than by local government.

The second one is that the contractor may try to supply this service to a lesser degree than is mentioned in the contract, to save some of his costs and so increase his profits. To avoid this problem local government inspectors are used to follow up the performance of the contractors.

The third one is that the conductor may suffer from the lack of workers for many reasons, such as illness and strikes. This may cause some disruptions or lack of carrying out this service.

So some people think that this service should be done by local government to make sure of the regularity and continuity of the service. But these people do not take in account before making this claim, that the lack of workers could happen in local government, as well as in the private sector.

The fourth one is that the conductor may face the problem of bankruptcy, which means the disruption of carrying out this job till local government makes an arrangement with another conductor.

To avoid this problem local government has to choose the conductor who has the best financial situation between the bidders. Furthermore, local government may ask the conductor to lodge some money in a bank, as a guarantee that he can do this job during the period of the contract without any disruption.

With the above two procedures local government can be sure, to a great extent, that the contractors which they choose will not suffer from the problem of bankruptcy.

In the previous discussion the advantages and disadvantages of applying the contracting out system were shown. It was shown also that the disadvantages are counteracted, while the advantages depend mainly on the creation of some competition between the companies in this activity. This competition is considered to be as a temporary competition system, because this competition happens once every few years when local government opens up the bidding. So the succession of

this system depends on how local government can keep this competition at its maximum, which depends on the other hand on the period of the contract.

In this case Young (13) notes that if the contract is for a very long time the contractor becomes relaxed because he gets a feeling of security and that can weaken the competitive pressure which is supposed to be provided, and he adds that if the contract is for a very short time the attractiveness to enter the bidding will be very low and that decreases the number of bidders which in turn means a decrease in the competition.

So local government has to be very careful in choosing the period of each contract to get the maximum utilization from applying this system.

Secondly: The specific purposes of studying this service are: (1) The attention of this activity was always very low compared with other local government services because of its low costs and its low priority compared with the others. In this case Young (14) notes that this service has low priority on government agendas compared to police, education, fire protection, and so on. In the same case McFarland, et. al. add that :

> "The need for comprehensive studies of solid waste management derived from a long history of inadequate public attention to problems of resource management and environmental control."(15)

It is shown in the previous quotations that this activity is suffering from the lack of numbers of previous studies, so there is a need for more studies in this area which might help in improving its management and also its productivity.

Therefore it is expected that this research is an additional study in an area which is suffering from the lack of previous studies. It is expected too that the measurement of productivity in this activity which is the main purpose of this research, may help in improving its management and so its productivity, if this measure is followed by more studies to find out why productivity has increased or decreased.

(2) This activity is an intensive labour activity. To support this view we have to look to the workers' cost and total cost in this activity which are shown in Table 4.1 below.

Table 4.1 The Workers' Cost and Total Cost in Waste Collection in England and Wales in 1978-79 till 1983-84.

£

	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
Employees' Cost	155,261,000	196,922,000	228,862,000	252,216,000	265,762,000	254,744,000
Gross Expenditure	265,584,000	336,241,000	395,581,000	424,641,000	450,984,000	431,244,000

Source Appendix A.

Note The contractors' cost in 1983-84 is removed from the total cost and it is not added to employees' cost, because it is not divided to workers' cost and to other costs.

To know how much of the total cost represents the workers the percentages between both are measured and shown in Table 4.2

Table 4.2 The Percentages of Workers' Cost to Total Cost in Waste Collection in England and Wales in 1978-79 till 1983-84.

%

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
58.46	58.56	57.58	59.39	58.92	59.07

Note These figures are calculated by dividing the workers' cost by the total cost which was represented in Table 4.1 and multiplying the results by 100.

It is shown in Table 4.2 that the workers' cost in waste collection in England and Wales during that period always represented a high percentage of the total cost. This percentage was almost 60% in each year of this period. So it is expected that workers are responsible for a great part of productivity in this service.

(3) Waste collection is one of local government activities in which the majority of its workers are manual workers. In this connection Hamblin & Adams note when they talk about local government in England and Wales that :

> "The majority of manual workers and their supervisors are employed in three main types of department education (particularly those engaged in school caretaking and catering); social services (especially in home help sections), and those departments which can be grouped together under the heading of technical services (these include staff involved in building and housing maintenance, parks and recreation facilities, street cleaning, and refuse collection."(16)

The manual workers in waste collection activities in England and Wales consist of drivers, loaders, driver/loaders and other manual staff. It is expected that productivity is more related to those people rather than the nonmanual staff who are vehicle maintenance staff and technical and administrative staff. The manual workers drive the vehicles, collect waste, transport the waste from one place to another. These jobs are the main jobs in waste collection, so it is expected that the manual workers represent the biggest part of the total workers in this service.

To support this idea in waste collection in England and Wales we have to look at Tables 4.3 and 4.4 to know the number of manual workers, total number of workers and percentages between them both.

Table 4.3 The Number of Manual Workers and the Total Number of Workers in Waste Collection in England and Wales in 1978-79 till 1983-84.

	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
Number of Manual Workers	32,311	32,875	31,808	30,891	29,540	26,588
Total Number of Workers	36,219	36,733	35,710	34,450	33,179	29,840

Source: Appendix A.

Note:
1. Total contractors' employees in 1983-84 are not included in this table because they are not divided into manual and nonmanual workers.
2. The number of manual workers are measured by adding together the number of drivers, loaders, driver/loaders and other manual staff.

Table 4.4 The Percentages of Manual Workers to Total Workers in Waste Collection in England and Wales in 1978-79 till 1983-84.

%

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
89.21	89.49	89.07	89.66	89.03	89.10

Note: The figures in this table are calculated by dividing the number of manual workers by the total number of workers, which are mentioned in Table 4.3 and multiplying the results by 100.

It is shown in Table 4.4 that the manual workers represent about 90% of the total workers in waste collecton in England and Wales. So it is expected they take the greatest part in productivity and growth in productivity in this area.

(4) The manual workers' jobs in this activity do not need highly skilled people, so productivity depends mainly on the system which is applied to motivate people to raise their efforts to increase their productivity. In this connection Sutermeister points out that :

> "Employee performance depends on motivation and ability of employees. Thus even though an individual is highly motivated, this motivation alone does not automatically lead to increased productivity."(17)

In the same case Vroom & Deci add that :

> "The performance of a person on a job is considered as a function of two different kinds of variables. One of these refers to the ability or skill of the individual to perform the job and the second refers to his motivation to use this ability or skill in the actual performance in the job."(18)

From the above two quotations it is shown that the workers' performance depends on two variables. These are motivation and skills (ability). But waste collection activity does not need highly skilled people, so productivity and the growth in productivity in this case depends mainly on the motivation system which is applied all over this activity.

(5) The output of waste collection is easier to be measured than most of the other local government activities, as will be shown later in this chapter. This view is supported by Forsyth when he points out that :

> "Perhaps it is easier to look at refuse collection, because of the ease of measurement of efficiency compared to other services such as social services."(19)

In the same case Kemper and Quigley (20) add that the defining of the output of waste collection activity is easier than most services provided by local government.

Therefore it is better to deal with this activity rather than the other local government activities, because of the expected clearness of its results compared with others.

(6) The incentive-bonus-schemes have been applied in this activity in the U.K. and also in England and Wales, since the mid sixties. In this case Byrne (21) notes that the working method of the commercial world (incentive bonus schemes) have been adopted in waste collection activities. In the same case it is mentioned by the National Board for Prices and Incomes (22) that over 40% of the men employed in refuse collection and street cleansing receive incentive payment.

From the above two quotations it is shown that these schemes have been applied in waste collecton for a long time, and a high percentage of its workers were utilised from these schemes from the beginning. These schemes are defined by the systems which are linked between payments on the one side and productivity on the other. So according to these schemes the money or a part of the money which the workers receive is related to their productivity.

The main purpose of applying these schemes is to motivate the workers to improve the productivity because it means an increase in their incomes as wages and salaries. The improvement of workers' productivity could also mean the reduction in service costs. This view is supported by Stevens (23) when he notes that the efficiency is highest and cost is lowest when the incentive system is used. In the same case Bloor (24) adds that the benefits of applying incentive bonus schemes could be summerized by the improvement of services, better utilization of resources and the reduction in its costs.

The succession of applying these schemes in any activity depends mainly on the availability of two conditions. These are : (1) the ease in measuring its output, and (2) the manual workers have a great effect on the productivity of the activity.

From the previous discussion it is found that these two conditions are available in waste collection in England and Wales. So it is expected that these schemes have succeeded in achieving their main purposes, which are the raising of wages and salaries and reducing costs.

Therefore the researcher found that this activity is an interesting area to be studied, to know how much the application of these schemes succeeded in achieving its main purposes.

4.4 Measuring the Productivity in Waste Collection in England and Wales.

Waste collection services in England and Wales are provided by local authorities, and they are financed mainly by taxes and rates which are unrelated to the level of the service. So we cannot use these taxes and rates to measure its output.

Also, we cannot use its costs as a measurement of the output of this service because costs in local authorities are expected to be uneconomic for the reasons which were mentioned earlier, such as the lack of competition, control, etc.

Therefore it is expected that physical terms are more accurate in measuring the output and productivity of this service than the financial terms, so it is recommended to be used in this case.

The output of this activity could be measured physically either by its weight (in tonnes) or by its volume (in cubic yards). The use of the former one is mainly recommended for many reasons. These reasons are mentioned by Savas, et. al., when they point out that :

> "Measuring the weight of refuse collected rather than the volume is highly recommended. Weight does not vary with the type of truck used, where the density of refuse varies according to weather, climate and vehicles compaction capacity."(25)

In the same case Feldman adds that :

> "The measure of volume (cubic yards) varies greatly with the type of truck (compactor, non-compactor), the loading crew method, and the completeness of loading."(26)

From the above two quotations, it is shown that the volume of waste varies according to the type of vehicle, weather, climate, vehicle capacity, the loading crew method and the completeness of loading, while the weight of waste does not vary. Therefore it is better to use the weight of waste as a measurement of the output of this activity physically.

Furthermore, by looking at the data available about waste collection in England and Wales which are mentioned in Appendix A and Appendix B, we found that there is no data available about the volumes of waste while the data about its weight are available. So it seems that the only way to measure the output of this activity, physically, in England and Wales, is by using the total waste collected (in tonnes).

Productivity is measured, as mentioned before, by dividing the output of any activity by one or more of its input. The input which is used in any case depends on the purpose of the study, which is mostly to measure the workers' performance. This requires dividing the output by one of the workers' aspects, either the number of workers or the man hours.

Because of the absence of data about man hours in waste collection in England and Wales, it is found that we have to use the number of workers as a denominator of the productivity equation. But as mentioned earlier, productivity is more related to manual workers rather than non manual workers. So the output in this case has to be

divided by the number of manual workers who are drivers loaders driver/loaders, and other manual staff.

Therefore the productivity in waste collection in England and Wales could be measured physically according to the following equation:

$$\text{Productivity in Waste Collection} = \frac{\text{Total waste collected (in tonnes)}}{\text{the number of manual workers}}$$

But this equation does not give a solid indication of productivity and the growth of productivity in this area, because there are many variables not taken into account in this equation. These variables are shown as follows:

The first one is the method or the methods of collection. The methods which are used in England and Wales are (1) backdoor collect and return, (2) kerbside system, (3) other collect and return, (4) skip system, (5) other normal methods, and (6) special collections.

Each of these methods is described by CIPFA (27) when it is seen that the backdoor collect and return refers to the situation where the operator has to collect the sack or collect and return the dustbin which has been placed at the backdoor of the house.

It is added that the kerbside is often known as the frontage system and includes cases where the householder moves the dustbin close to or on to the street for collection. It is mentioned, too, that the skip system is an individual dustbin-sized container carried by the operator, the contents of the dustbin are first emptied into the skip and then carried to the collection vehicle.

It is mentioned also that the other two methods refer to the situation where the operator either collects from the front of a house, or a dustbin is collected from the backdoor, but is returned to the front of the house by the operator, and the householder is then responsible for its subsequent return to the back.

From the previous discussion it is shown that in each of these methods the customer has to take part in this job. This part varies from one method to another. In some the customer has to do a greater part of this job than the others. For instance in the backdoor system the customer is responsible only for putting his dustbin at the backdoor, while in the kerbside system he has to move his dustbin close to or on to the street. The less work the customer has to do the better the quality of the method of collection.

The second one is the frequency of carrying out the service. It is found that the frequency of collection in England and Wales is twice or more, once or less than once a week. The more frequent the collection is made the greater the quality of the service. This idea is supported by Collins & Downes when they point out that :

> "More frequent service, it has been argued, allows less time for refuse to stand before being picked up and hence is less likely to give off offensive odors and to be spilled by dogs or vandals. Also, smaller and/or fewer garbage containers are required to adequately contain the accumulated garbage, and thus overflows are avoided between pickups."(28)

In the same case Clark, et. al.,(29) note that the frequency of collection determines the storage period during which odours, flies, and vermin can invade the citizens' storage facilities.

From the above two quotations it is shown that the greater the frequency of collecting waste the better the quality of doing this service, because it means (1) the less dirty the district is by avoiding the overflows between pickups and by allowing less time for waste to stand before being picked up, and (2) less health hazards for the citizens.

The third one is the reliability in collecting waste. The more reliable the workers are in collecting waste, the better the quality of doing this service because it means (1) the more clean the district is, (2) less noise in collecting waste, and so on.

4.5 The Additional Measurements of Productivity in Waste Collection in England and Wales.

From the previous discussion we found that we can measure productivity in this activity in England and Wales physically by the output (in tonnes) divided by the total number of manual workers, and by taking into account the quality of doing this activity. But this measurement does not give enough indication for productivity and the growth of productivity for every person who is interested in this area. It does not give a clear indication to central government, taxpayers, consumers, voters, councillors and workers and their unions.

The first five groups are looking to the growth in productivity in this activity as well as in the other local government activities because it could mean the reduction of costs per unit of output (the quantity of waste in tonnes) which means the reduction in costs per person served.

The reduction in costs per person served could mean the reduction in payments of these groups as taxes, rates and grants. So in spite of the inaccuracy of costs and measurement of output and productivity in this activity, it could be used for making additional measurements for these groups to give them additional information which they are looking for. Therefore the additional measurements which are used to give satisfactory information of productivity and the growth of productivity for central government, taxpayers, consumers, voters and councillors are (1) costs per tonne, and (2) costs per person served.

Workers are looking to the growth in productivity because it could mean for them an increase in their wages and salaries, and it could help their unions in their negotiations with the government to increase these wages and salaries.

But the growth of productivity could have a negative effect from their viewpoint. This negative effect is the increase in the number of unemployed people in this service. So the additional measurements which could give a clear indication for productivity and the growth of productivity from the viewpoint of workers and their unions are (1) the growth in their wages and salaries, and (2) the growth in the number of unemployed people.

In general it is hypothesised from the previous discussion that the growth of productivity (which is measured physically) has to be accompanied by (1) the reduction in costs per tonne, (2) the reduction in costs per person served, (3) the increase in wages and salaries, and (4) the increase in unemployed people.

All of these measurements have to be counted to give enough indication for the different people who are interested in this area.

4.6 Summary and Conclusion

It was found in this chapter that it is better to measure the productivity in waste collection in England and Wales physically rather than financially, because of the absence of the sales value of its output and because it is expected that its cost is uneconomic.

The equation which is recommended to be used in this case is :

Productivity = Total waste collected/the number of manual workers

But this does not mean that this equation is an accurate measurement of productivity in this area, because it does not take into account the quality of doing this service, such as the methods of collection and frequency of collection.

At the same time this equation does not give enough indication for productivity and the growth of productivity for the different people who are interested in this area. Therefore, it is recommended to use some other measurements, in addition to this equation, to provide different people with different information they need.

The additional measurements which are recommended are costs per tonne, costs per person served, wages and salaries and unemployment. The relationships between the different methods of measuring productivity are hypothesised to be as follows. The growth of productivity which is measured physically has to be accompanied by reduction in costs per

tonne, reduction in costs per person served, an increase in wages and salaries, and an increase in the number of unemployed people.

4.7 References

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CHAPTER V

TIME SERIES STUDY FOR THE GROWTH OF PRODUCTIVITY IN WASTE COLLECTION IN ENGLAND AND WALES IN 1978-79 UNTIL 1983-84

5.1 Introduction

It was mentioned in the previous chapter that the productivity of waste collection in England and Wales is better to be measured physically by dividing the total waste collected in tonnes, by the total number of manual workers which consists of drivers, loaders, drivers/loaders and other manual workers.

It is hypothesized in the previous chapter that the growth of producitivty in waste collection has to be accompanied by the reduction in costs per tonne and the reduction in costs per person served, which is important to central government, taxpayers, consumers, voters and councillors.

It is hypothesized also in the previous chapter that the growth of productivity in waste collection has to be accompanied by the growth of workers' wages and salaries, and the growth in unemployment in this activity, which are important for the workers and their unions.

To examine the above hypothesis, time-series study was done for each of the above measurements. This time-series study for waste collection in England and Wales covers the period which started in 1978-79 till 1983-84. The main reason for choosing this period is that these are the only series of data which are available about waste collection in England and Wales. The data in year 1976-77 was eliminated from this study because of the absence of the data in year 1977-78.

Therefore this chapter is divided into three main sections, in addition to this section. The first section depends on the physical measurement of productivity in waste collection and is called the growth of

productivity in waste collection in England and Wales in 1978-79 till 1983-84.

The second section depends on two financial measurements. These measurements are the costs per tonne and the costs per person served. This section is called the growth of productivity in waste collection in England and Wales in 1978-79 till 1983-84 from the viewpoint of central government, taxpayers, consumers, voters and councillors.

The third section depends on two measurements. These are the growth in wages and salaries and the growth in unemployment in this area. This section is called the growth of productivity in waste collection in England and Wales in 1978-79 till 1983-84 from the viewpoints of workers and workers' unions.

From the previous discussion it was found that there are many measurements used to measure productivity in waste collection in England and Wales. Some of these measurements are financial, such as costs per tonne, costs per person served, wages and salaraies. Some of these measurements are physical - such as output per manual worker and unemployment.

The financial measurements are suffering, as mentioned earlier, from the problem of inflation. To avoid this problem each financial figure has to be deflated by using one or more of the price indices. The price indices which are used in the U.K. and also in England Wales are mainly divided into general price indices, such as the Gross National Product, and specific price indices such as Index of Retail Prices and Consumers' Expenditure Deflation Index.

It was recommended in Chapter II that it is better to use one of the general price indices in this case to eliminate only the impact of the changing of the monetary values on the financial figures. According to this recommendation it is better to use the Gross National Product to deflate the financial figures in measuring the productivity in waste collection in England and Wales.

It is found that the commonest index which is used in this case in the U.K. is the Retail Price Index, because this index includes the average prices for consumer goods and services, and most people are more interested in the prices of these goods and services rather than in the others which are not included in this index. Craven supports this view when he points out that:

> "The inflation rate usually quoted in the UK is the change in the average prices of consumer goods, which is the Retail Price Index. This index is constructed by averaging the increase in the prices of consumer goods, weighting each price by the average amount that is bought by each consumer."(1)

In the same connection Craven adds that:

> "The Retail Price Index is not an average of all prices in the economy because it does not include the prices of investment goods, but it is the index of greatest relevance to consumers, and to workers and trade unions who are trying to negotiate money wage increases to maintain their real wages." (2)

From the above two quotations it is found that the Retail Price Index is not a general price index because it includes only the prices of the consumers' goods and services. So the level of prices is measured in this index by averaging the prices of consumers' goods and services and weighing each price by the average amounts which are bought by the consumers.

It is mentioned too in the above two quotations that this index is the most common one. The majority of people prefer to use this index rather than the other indices, because this index includes the prices of the most important goods and services.

Due to the previous discussion the Retail Price Index is recommended to be used to deflate the financial figures which are used in measuring the productivity in waste collection in England and Wales during the period which started in 1978-79 till 1983-84.

The Retail Price Index in the U.K. is used to represent the price levels in England and Wales during the period of study. This data is shown in Table 5.1. It was found that the base year of this data is 1974, so the data has to be adjusted by using 1978-79 (the first year of the study) as a base year. This new data is shown in Table 5.2.

Table 5.1 The Price Levels in England and Wales in 1978-79 till 1983-84 (by using 1974 as a Base Year).

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
201.6	233.5	271.6	302.8	324.2	339.3

Source: Department of Employment Gazette (various issues).

Notes: 1. The data of retail price indices are collected from the Department of Employment Gazette in years 1979, 1980, 1981, 1982, 1983 and 1984 from the tables of General Index of Retail Prices from the Columns of All Items.
2. It is found that this data which is mentioned in these tables is monthly data, so the average price indices in each financial year are counted by adding together the price indices of 12 months starting in April in any year till the end of March of the following year, and dividing the results by 12.

Table 5.2 The Index of Price Levels in England and Wales in 1978-79 till 1983 84 (by using 1978-79 as a Base Year)

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
100 0	115 8	134 7	150 2	160 8	168 3

Notes The figures in this table are calculated from the data which is mentioned in Table 5.1 by dividing the figure of each year by the figure of 1978-79 and multiplying the results by 100.

The adjusted price levels which are mentioned in Table 5.2 will be used to deflate each financial figure which are involved in measuring productivity and the growth in productivity in waste collection in England and Wales in 1978-79 till 1983-84.

5.2 The Growth of Productivity in Waste Collection in England and Wales in 1978-79 till 1983-84

It was mentioned before that productivity in this case is measured physically by dividing the total waste collected (in tonnes) by the total number of manual workers. The previous one is already available in the data of Appendix A while the total number of manual workers is counted by adding together the number of drivers loaders driver/loaders and the other manual staff. The total waste collected and the total number of manual workers are shown in Table 5.3

The productivity in waste collection in England and Wales is measured in each year by dividing the total waste collected by the total number of manual workers. The results are shown in Table 5.4.

The productivity of each year is adjusted by using 1978-79 as a base year and the results are illustrated in Table 5.5. From these results the yearly rate of growth of productivity in waste collection in England and Wales in 1978-79 till 1983-84 are measured and this is shown in Table 5.6.

Table 5.3 The Total Waste Collected and the Total Number of Manual Workers in England and Wales in 1978-79 till 1983-84.

	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
Total Waste Collected (Tonnes)	13363330	14200954	14529928	14434342	15070488	14791398
Total Manual Workers (Workers)	32311	32875	31808	30891	29540	27282

Source Appendix A.

Notes 1. This data was collected from the Table (1) in each year which is entitled by the Summary of Non-Financial Data.
2. It was found that the staff who worked in 1983-84 consisted of two kinds of workers the local authoritiy's and the contractor's workers It is mentioned too that all the contractor's workers are manual workers, while the local authority workers are divided into manual and non-manual workers. Therefore the total manual workers in 1983-84 is counted by adding together the total local authority manual workers to the total contractor's workers.

Table 5.4 The Output per Manual Worker in Waste Collection in England and Wales in 1978-79 till 1983-84.

Tonnes

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
413.58	431.96	456.80	467.26	510.17	542.16

Note. These figures are counted by dividing the total waste collected by the total number of manual workers which are mentioned in Table 5.3.

Table 5.5 The Index of the Output per Manual in Waste Collection in England and Wales in 1978-79 till 1983-84 (by using 1978-79 as a Base Year).

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
100.0	104.4	110.4	112.9	123.3	131.1

Note: The figures in this table are calculated from the data which is mentioned in Table 5.4 by dividing the figure of each year by the figure of 1978-79 and multiplying the results by 100.

Table 5.6 The Percentage Growth of Output per Manual Worker in Waste Collection in England and Wales in 1978-79 till 1983-84.

%

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
	4.4	5.7	2.2	9.2	6.3

Note: The figures in this table are calculated by using the data which is mentioned in Table 5.5 by dividing the difference between the figures of two years by the figures in the first year and multiplying the results by 100.

It is shown in Table 5.6 that there was always a high positive rate of growth of productivity in waste collection in England and Wales in each year in the period which started in 1978-79 till 1983-84. The lowest rate of growth was 2.2% in 1981-82 and the highest rate of growth was 9.2% in 1982-83. The rate of growth in the other years was always higher than 4%.

Collecting waste depends mainly on the manual workers who are collecting the waste and driving the vehicles. and the vehicles which are used to carry the waste from one place to another. Therefore the high rates in growth of productivity in waste collection in England and Wales during this period might be due to the following two reasons.

The first reason might be because the manual workers in this activity in England and Wales raised their efforts because of the expansion in applying the incentive bonus schemes during this period.

The second reason might be because the local authorities started to use the more technologised vehicles which are specialised in this area. It

is expected that these types of vehicles are more productive than the previous ones because of their greater capacity and also their speed is greater than the others.

It is expected that the previous reason is most likely to have played a greater part in productivity and the growth in productivity in waste collection in England and Wales during that period because this activity is, as mentioned before, a labour-intensive activity, its manual workers represent the majority of its workers, it does not need highly skilled workers and the incentive bonus schemes have been applied in this activity since the mid sixties.

5.3 The Growth of Productivity in Waste Collection in England and Wales in 1978-79 till 1983-84 from the Viewpoint of Central Government, Taxpayers, Consumers, Voters and Councillors.

It has been mentioned before that these people are looking to the growth of productivity in waste collections because it could mean the reduction in costs per tonne or the reduction in costs per person served. Therefore, this section is divided into two parts. The first one is aiming to measure the costs per tonne and the second to measure the costs per person served.

5.3.1 The Costs Per Tonne: Costs per tonne could be measured by dividing the total costs by the total waste collected (in tonnes). By looking to the data which is available in Appendix A in Table 1 and Table 2, we notice that the total waste collected (in tonnes) is already available in this data, while there are two figures representing the total costs. These two figures are the gross

expenditure and the net expenditure

The gross expenditure represents the total costs which are used to collect waste while the net expenditure is measured by subtracting the total income from the gross expenditure. The total income contains the collection charges, sales of reclaimed waste and the contributions from other authorities. Some of this income is not related to the quantity of collected waste, or to the quality of doing this service such as the contributions from other authorities. So it is expected that the gross expenditure is more representative of the total costs than the net expenditure.

The total waste collected (in tonnes) is shown in Table 5.3 while the data about the gross expenditure will be presented in Table 5.7 as follows.

Table 5.7 The Gross Expenditure in Waste Collection in England and Wales in 1978-79 till 1983-84 (Actual).

£

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
265,584,000	336,241,000	395,581,000	424,641,000	450,984,000	440,745,000

Source Appendix A.

This data is financial data so it has to be deflated as mentioned before, by using the price levels in England and Wales in 1978-79 till 1983-84 (by using 1978-79 as a base year), which are mentioned in Table 5.2. The results are represented in Table 5.8 as follows.

Table 5.8 The Gross Expenditure in Waste Collection in England and Wales in 1978-79 till 1983-84 (Deflated).

£

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
265,584,000	290,363,550	293 675 570	282 717 040	280 462.680	261.880.570

Note These figures are calculated by dividing the actual gross expenditure which is mentioned in Table 5.7 by the price levels which are mentioned in Table 5.2

By using the deflated gross expenditure which is mentioned in Table 5.8 and the total waste collected (in tonnes) which is mentioned in Table 5.3, we can measure the real costs per tonne in waste collection in England and Wales in 1978-79 till 1983-84. The results are shown in Table 5.9 as follows.

Table 5.9 The Real Costs Per Tonne in Waste Collection in England and Wales in 1978-79 till 1983-84.

£

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
19.8	20.4	20.2	19.6	18.6	17.7

Note: These figures are calculated by dividing the deflated gross expenditure which is mentioned in Table 5.8 by the total waste collected which is mentioned in Table 5.3

The real costs per tonne are adjusted by using 1978-79 as a base year, and the results are represented as follows in Table 5.10.

Table 5.10 The Index of the Real Costs per Tonne in Waste Collection in England and Wales in 1978-79 till 1983-84 (by using 1978-79 as a Base Year).

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
100.0	103.0	102.0	98.9	93.9	89.4

Note The figures in this table are calculated from the data which is mentioned in Table 5.9 by dividing the figure of each year by the figure of 1978-79 and multiplying the results by 100.

From these results the yearly rate of growth in costs per tonne in waste collection in England and Wales in 1978-79 till 1983-84 are measured and shown in Table 5.11 as follows.

Table 5.11 The Percentage Growth of Costs per Tonne in Waste Collection in England and Wales in 1978-79 till 1983-84.

%

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
	3.0	-0.9	-3.0	-5.0	-4.8

Note The figures in this table are calculated by using the data which is mentioned in Table 5.10, by dividing the difference between the figures of two years by the figures in the first year and multiplying the results by 100.

It is shown in Table 5.11 that there was a high positive rate of growth of costs per tonne in 1979-80 and was followed by negative rates in growth which means a yearly reduction in costs per tonne in 1980-81,

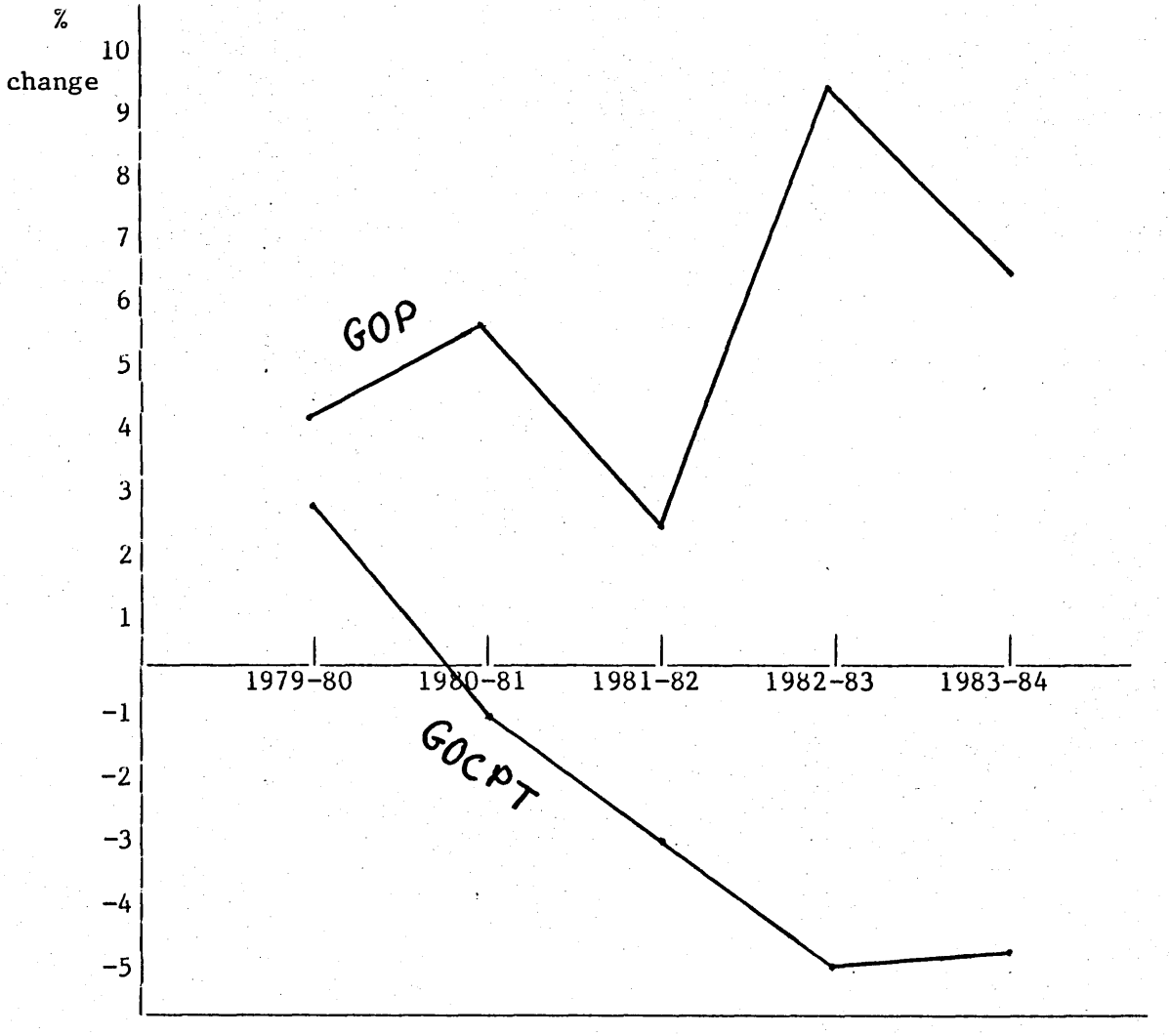
1981-82, 1982-83 and 1983-84. We notice also from this table that the reduction in costs was very high in 1981-82, 1982-83 and 1983-84 which were -3.0%, -5.0% and -4.8% respectively.

It was hypothesized earlier in this chapter that the growth in productivity has to be accompanied by the reduction in costs per tonne. To examine this hypothesis in waste collection in England and Wales, we have to compare the yearly rate of growth in costs per tonne which is mentioned in Table 5.11 by the yearly rate of growth of productivity which is mentioned in Table 5.6. This comparison is shown in Figure 5.1.

From this figure we notice that the positive rates of growth of productivity in the years 1980-81, 1981-82, 1982-83 and 1983-84 were always accompanied by negative rates of growth in costs per tonne. We notice also in these years that the highest two rates of growth of productivity which were 9.2% in 1982-83 and 6.3% in 1983-84, were accompanied by the highest two negative rates of growth in costs per tonne which were -5.0% and -4.8%.

But it was found that the positive rate in growth of productivity in 1979-80 was accompanied by a positive rate of growth in costs per tonne. This unexpected relationship in that year might be because there was an increase in one of the costs' variables or more, with a higher rate than the rate of growth of productivity. The costs' variables might be wages and salaries, capital expenditure and so on.

Figure 5.1 The Relationship Between the Percentage Growth of Productivity and the Percentage Growth of Costs per Tonne in Waste Collection in England and Wales in 1978-79 till 1983-84.



Notes
1. GOP = The Percentage Growth of Productivity.
2. GOCPT = The Percentage Growth of Costs Per Tonne.

Despite the unexpected relationship between the growth in productivity and the growth in costs per tonne in 1979-80, it was found that this relationship was always negative, as it was hypothesized, in 1980-81, 1981-82, 1982-83 and 1983-84. So in general, it was found that the growth in productivity in waste collection in England and Wales in 1978-79 till 1983-84 succeeded in reducing the costs per tonne which the central government, taxpayers, consumers, voters and councillors are looking for.

5.3.2 The Costs Per Person Served: Costs per person served is measured by dividing the real costs by the total number of population. The real costs are measured, as mentioned before, by the real gross expenditure which was mentioned in Table 5.8.

The total number of population in England and Wales in 1978-79 till 1983-84 is taken from the data available in Appendix A from Table 1, to be represented in Table 5.12 as follows.

Table 5.12 The Total Number of Population in England and Wales in 1978-79 till 1983-84.

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
42,768,190	44,143,935	45,302,700	46,757,000	48,298,500	46,913,000

Source: Appendix A.

By using the real gross expenditure which is mentioned in Table 5.8 and the total number of population we can measure the costs per person served. The results are shown in Table 5.13 as follows.

Table 5.13 Costs per Person Served in Waste Collection in England and Wales in 1978-79 till 1983-84.

£

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
6.2	6.5	6.4	6.0	5.8	5.6

Note The figures in this table are calculated by dividing the real gross expenditure which is mentioned in Table 5.8 by total number of population which is mentioned in Table 5.12.

The costs per person served are adjusted by using 1978-79 as a base year and the results are illustrated as follows in Table 5.14.

Table 5.14 The Index of Costs per Person Served in Waste Collection in England and Wales in 1978-79 till 1983-84 (by using 1978-79 as a Base Year).

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
100.0	104.8	103.2	96.7	93.5	90.3

Note: The figures in this table are calculated from the data which is mentioned in Table 5.13 by dividing the figure of each year by the figure of 1978-79 and multiplying the results by 100.

From these results the yearly rate of growth in costs per person served in waste collection in England and Wales in 1978-79 till 1983-84 are measured. The results are shown in Table 5.15 as follows.

Table 5.15 The Percentage Growth of Costs per Person Served in Waste Collection in England and Wales in 1978-79 till 1983-84.

%

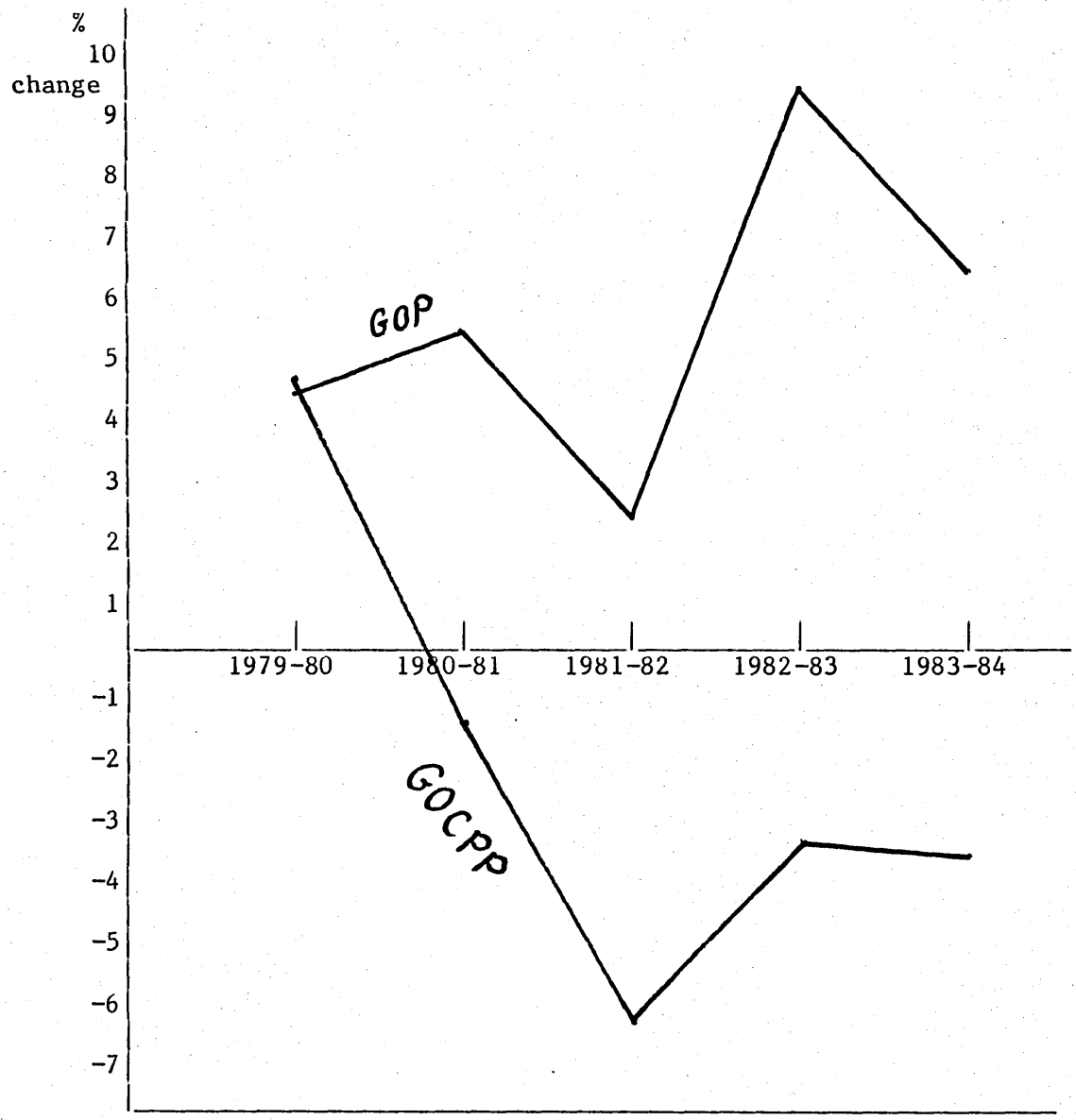
1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
	4.8	-1.5	-6.3	-3.3	-3.4

Note: The figures in this table are calculated by using the data which is mentioned in Table 5.14, by dividing the difference between the figures of two years by the figures of the first year and multiplying the results by 100.

It is shown in this table that there were negative rates in growth of costs per person served in four years. These years are 1980-81, 1981-82, 1982-83 and 1983-84. and the negative rates of growth in the last three years were very high. We notice also from this table that there was a positive rate of growth in costs per person served in 1979-80.

It was hypothesized earlier in this chapter that the growth of productivity has to be accompanied by the reduction in costs per person served. To examine this hypothesis in waste collection in England and Wales in 1978-79 till 1983-84, we have to compare the yearly rates of growth of productivity which are mentioned in Table 5.6 by the yearly rates of growth in costs per person served which are mentioned in Table 5.15. This comparison is presented in Figure 5.2.

Figure 5.2 The Relationship Between the Percentage Growth of Productivity and the Percentage Growth of Costs per Person Served in Waste Collection in England and Wales in 1978-79 till 1983-84.



Note: 1. GOP = The Percentage Growth of Productivity
2. GOCPP = The Percentage Growth of Costs Per Person Served.

From this figure we notice that this relationship was nearly always as it was hypothesized with only one exception. This exception is in 1979-8. In this year the growth in productivity was accompanied by an increase in costs per person served. It is expected, as mentioned before, that one or more of the costs' variables in that year might be increased by a higher rate than the productivity growth rate.

Therefore we notice in general that the growth of productivity in waste collection in England and Wales in that period succeeded in reducing the costs per person served, as well as the costs per tonne, which are important from the viewpoints of central government, tax payers, consumers, voters and councillors.

5.4 The Growth of Productivity in Waste Collection in England and Wales in 1978-79 till 1983-84 from the Viewpoint of Workers and Workers' Unions.

It was mentioned before that the growth of productivity means an increase in workers' wages and salaries, especially in this service to which the incentive bonus schemes are applied. At the same time the workers' unions are looking to that growth in productivity which could help them in their negotiations with the government to raise the workers' wages and salaries.

But the growth of productivity could mean to the workers and their unions, an increase in the number of unemployed people in this area. Therefore, this section is divided into two parts. The first part is the growth of wages and salaries and the second is the growth of unemployed people.

5.4.1 The Growth of Wages and Salaries: It was mentioned before that productivity in this area is more related to manual workers who are drivers, loaders, driver/loaders and other manual staff, rather than non-manual workers who are vehicle maintenance staff and technical and administrative staff. In addition to this, it is expected that the incentive bonus schemes are usually applied to the manual workers rather than the non-manual workers.

Therefore it is better to depend, in this case, on the wages and salaries for manual workers. But by looking at the data available in Appendix A, it is found that there is no separation between wages and salaries for manual workers and non-manual workers. So we have to depend in this part on the average wages and salaries for all workers.

To measure the average wages and salaries we need the total wages and salaries and the total number of staff employed which are represented in Table 5.16. Wages and salaries are financial figures, so their figures have to be deflated by using the price levels in England and Wales in 1978-79 till 1983-84 which are mentioned in Table 5.2, and the results are shown in Table 5.17.

By using the deflated wages and salaries which are mentioned in Table 5.17 and the total staff employed, we can measure the average real wages and salaries which are shown in Table 5.18. The results are adjusted by using 1978-79 as a base year, and shown in Table 5.19.

The adjusted wages and salaries which are mentioned in Table 5.19 are used to measure the yearly rate of growth in wages and salaries. The results are represented in Table 5.20.

Table 5.16 The Total Wages and Salaries and the Total Staff Employed in Waste Collection in England and Wales in 1978-79 till 1983-84 (Actuals).

	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
Wages and Salaries (Expenditure-Employees) (£)	155,261,000	196,922,000	228,862,000	252,216,000	265,762,000	254,744,000
Total Staff Employed (Workers)	36,219	36,733	35,710	34,450	33,179	29,840

Source: Appendix A.

Note: The number of contractors' workers in 1983-84 are not included in the total number of staff employed because their wages and salaries are not included in the total wages and salaries but are included in the contractors' expenditures.

Table 5.17 The Total Real Wages and Salaries in Waste Collection in England and Wales in 1978-79 till 1983-84 (Deflated).

£

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
155,261,000	170,053,540	169,904,970	167,920,100	165,274,870	151,363,040

Note: The figures in this table are calculated by dividing the actual wages and salaries which are mentioned in Table 5.16 by price levels in England and Wales which are mentioned in Table 5.2.

Table 5.18 The Average Real Wages and Salaries in Waste Collection in England and Wales in 1978-79 till 1983-84.

£

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
4286.7	4629.4	4757.9	4874.3	4981.3	5072.4

Note The figures in this table are calculated by dividing the deflated wages and salaries mentioned in Table 5.17 by the total staff employed mentioned in Table 5.16.

Table 5.19 The Index of the Average Real Wages and Salaries in Waste Collection in England and Wales in 1978-79 till 1983-84 (by using 1978-79 as a Base Year).

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
100.0	107.9	110.9	113.7	116.2	118.3

Note. This data is calculated by using the data which is available in Table 5.18, by dividing the figure of each year by the figure of 1978-79 and multiplying the results by 100.

Table 5.20 The Percentage Growth in Wages and Salaries in Waste Collection in England and Wales in 1978-79 till 1983-84.

%

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
	7.9	2.8	2.5	2.2	1.8

Note: These figures are calculated by using the data which is mentioned in Table 5.19 by dividing the difference between the figures of two years by the figures of the first year and multiplying the results by 100.

It is shown in Table 5.20 that there was always a positive rate of growth in wages and salaries in waste collection in England and Wales in each year of the period which started in 1978-79 till 1983-84. The average yearly growth in wages and salaries was nearly 2% - 2.5% in the years 1980-81, 1981-82, 1982-83 and 1983-84, but this rate was very high in 1978-79.

The rate in 1978-79 was 7.9% and that might explain the unexpected relationship between the growth in productivity from one side and the growth in costs per tonne and the growth in costs per person served from the other.

The growth rate in wages and salaries in 1978-79 was much higher than the rate of growth of productivity of that year which was 4.4%. This high difference between both of them might explain why there was a positive growth in costs per tonne and costs per person served in that year, while there was an increase in productivity.

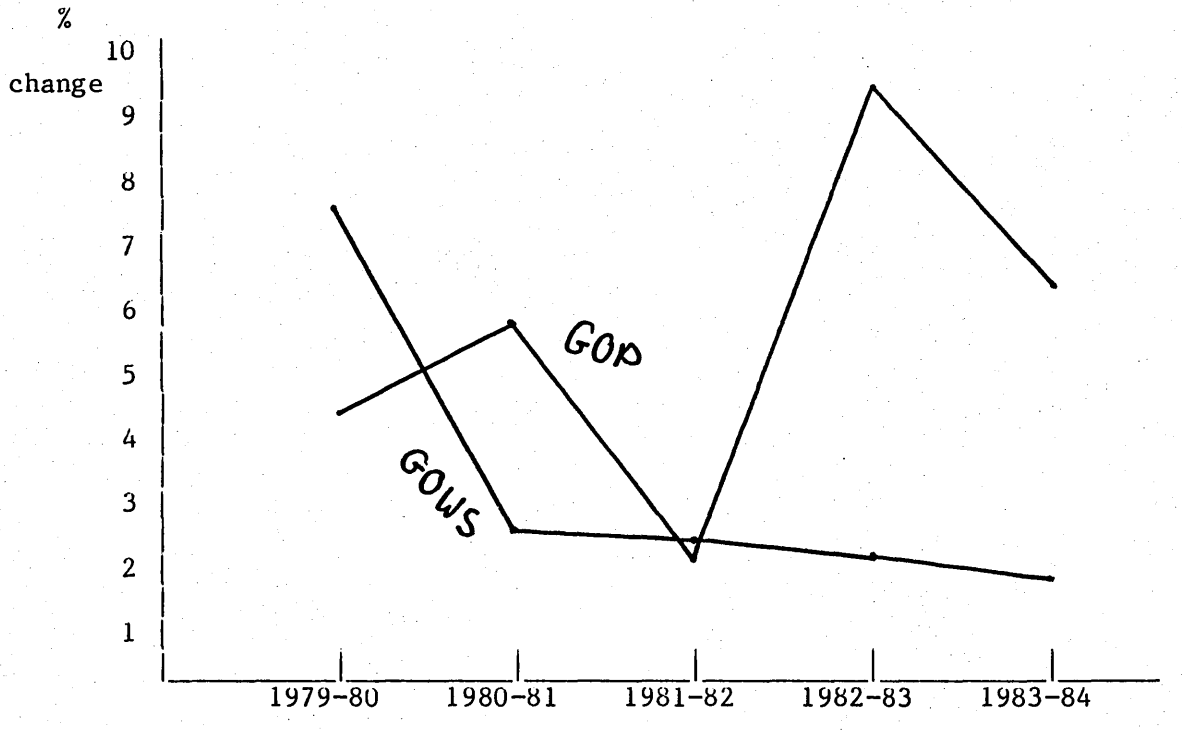
It was hypothesized earlier in this chapter that the growth of productivity has to be accompanied by an increase in wages and salaries. To examine this hypothesis in waste collection in England and Wales in 1978-79 till 1983-84, we have to compare the growth rates of wages and salaraies mentioned in Table 5.20 by the growth rates in productivity mentioned in Table 5.6. This comparison is shown in Figure 5.3.

From this figure we notice during this period that there was always a positive rate in growth of productivity and a positive rate of growth of wages and salaries in each year. We notice also from this comparison that the rates of growth of productivity were much higher than the rates of growth of wages and salaries in 1980-81, 1982-83 and 1983-84, while the rate of growth of productivity was much lower than the rate of growth of wages and salaries in 1979-80 and it was slightly lower than the rate of growth of wages and salaries in 1981-82.

This means that there was always a positive relationship between the growth of productivity on the one side and the growth in wages and salaries on the other and the rate of growth of productivity was sometimes higher and sometimes lower than the rate of growth of wages and salaries.

So we notice in general that the growth of productivity in waste collection in England and Wales in 1978-79 till 1983-84 succeeded in improving the workers' wages and salaries which is important from the viewpoint of waste collection workers and their unions.

Figure 5.3 The Relationship Between the Percentage Growth of Productivity and the Percentage Growth of Wages and Salaries in Waste Collection in England and Wales in 1978-79 till 1983-84.



Notes: 1. GOP = The Percentage Growth of Productivity.
2. GOWS = The Percentage Growth of Wages and Salaries.

5.4.2 The Growth of Unemployed People: An unemployed person can be defined as the man or woman who is able and willing to work for salaries and wages similar to those who are at work but he or she cannot get work.

But this definition is not completely precise because some of these people are willing to work at full-time jobs can only get part-time jobs. These people are seen to be employed for some hours and unemployed for the others. Therefore Craven (3) notes that unemployment is the total number of hours people want to work in a period, minus the number that they actually do work.

The number of unemployed in the U.K. was counted before 1982 by the number of people who could not get any work or who had lost their work and registered in the Department of Employment Gazette. From 1982 on, the number of unemployed people in the U.K. have been counted by the number of people who have lost their jobs in addition to the people who have not got any job and who are collecting benefits from the Social Security Office.

By looking to the data about waste collection in England and Wales in 1978-79 till 1983-84, which are mentioned in Appendix A, we notice that there is no data about the number of unemployed people who are registered either in the Department of Employment Gazette or in the Social Security Office.

So it is found that the only way to measure the number of unemployed people in this area, is to depend on the number of employed people in each year. The reduction of the number employed people within two years is seen by the increase in the number of unemployed people in one year. By dividing this reduction by the number of employed people in the previous year, we can count the percentage of unemployed people in that year.

It is mentioned before that productivity and the growth of productivity are related to the manual workers than the non-manual workers. So it is expected that we have to depend on only the numbers of manual workers to measure the effect of the growth in productivity on the number of unemployed people. But if we refer back to the definition of unemployment it is found that we have to take into account the whole number of unemployed people in this area. Therefore we have to depend on the total number of people who are working in this area, which are

shown in Table 5.21 as follows

Table 5.21 The Total Numbers of Employed People in Waste Collection in England and Wales in 1978-79 till 1983-84.

Workers

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
36,219	36,733	35,710	34,450	33,179	30,534

Source. Appendix A.

Note: The contractor's workers are included in the total number of people working in 1983-84, because in this case we want to know the reduction in the total number of people working in this area.

From Table 5.21 the yearly reduction in the number of employed people is measured and represented in Table 5.22 as :

Table 5.22 The Yearly Reduction in the Number of Employed People in Waste Collection in England and Wales in 1978-79 till 1983-84.

Workers

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
	- 0,514	1,023	1,260	1,271	2,645

Note: These figures are calculated by subtracting the number of employed people in each year from the corresponding number in the previous year.

From the data which are represented in Table 5.21 and Table 5.22 the yearly rate of reduction in the employed people is measured and represented in Table 5.23 as follows.

Table 5.23 The Percentage Reduction in the Employed People in Waste Collection in England and Wales in 1978-79 till 1983-84.

%

1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
	-1.4	2.8	3.5	3.7	7.8

Note. These figures are measured by dividing the reduction in the number of employed people in each year which are mentioned in Table 5.22 by the total number of employed people in the previous year which are mentioned in Table 5.21 and multiplying the results by 100.

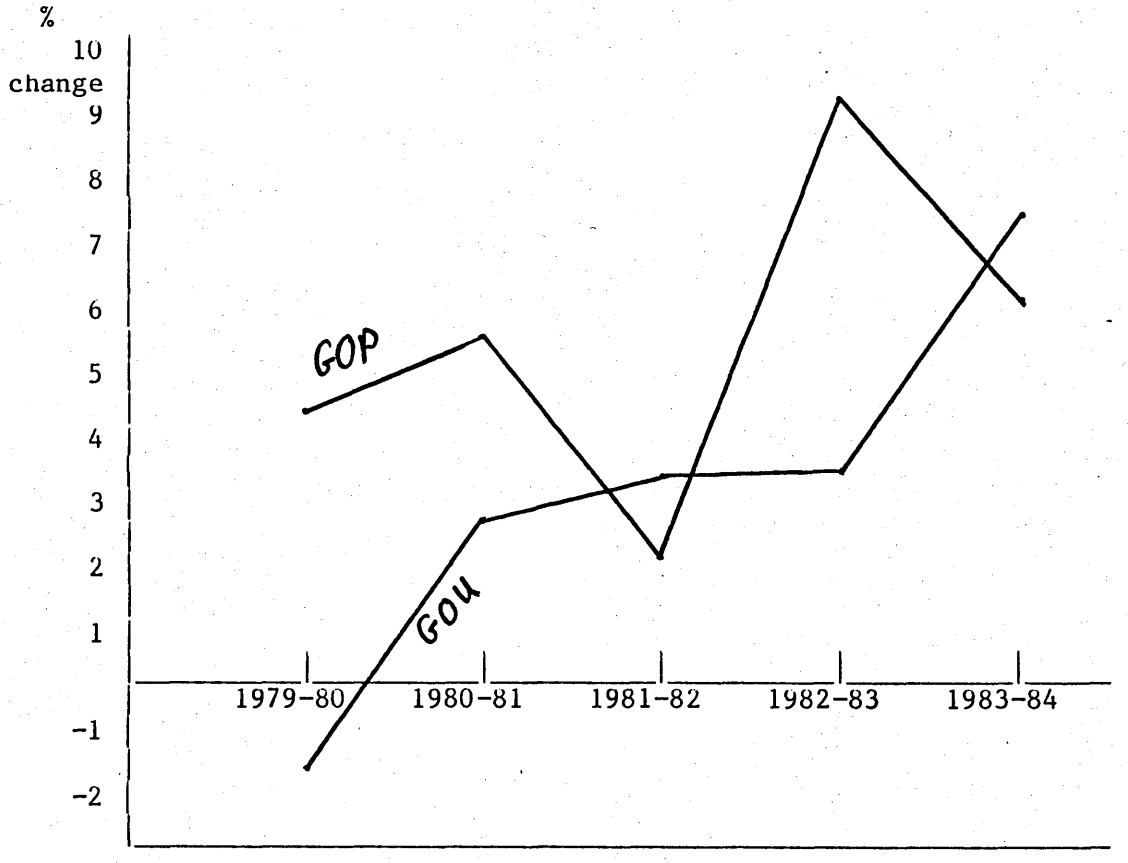
On looking at Table 5.22 we notice that there was a reduction in the number of employed in each year during 1980-81, 1981-82, 1982-83 and 1983-84, while there was an increase in 1979-80. Thus we notice also that there was always a positive rate in reduction in each year during 1980-81, 1981-82, 1982-83 and 1983-84, while there was a negative rate in reduction in 1979-80.

It was hypothesized earlier in this chapter that the growth of productivity has to be accompanied by an increase in the number of unemployed people. To examine this hypothesis in waste collection in England and Wales in 1978-79 till 1983-84 we have to compare the growth in unemployment rates during that period, which is mentioned in Table 5.23 by the yearly rate of growth of productivity which is mentioned in

Table 5.6. This comparison is shown in Figure 5.4.

From this figure we notice that there was always a positive rate of growth of productivity accompanied by positive rates of unemployment in the following years. These years are 1980-81, 1981-82, 1982-83 and 1983-84. We notice also that the highest two rates of growth of productivity were in 1982-83 and 1983-84 and accompanied by the highest two rates of unemployment.

Figure 5.4 The Relationship Between the Percentage Growth of Productivity and the Percentage Growth of Unemployment in Waste Collection in England and Wales in 1978-79 till 1983-84.



Notes: 1. GOP = The Percentage Growth of Productivity.
2. GOU = The Percentage Growth of Unemployment.

It is shown also in Figure 5.4 that there was an exception in the relationship between the growth in productivity and the rate in unemployment in only one year. This year was 1979-80. In that year the positive growth in productivity was accompanied by a negative rate in unemployment.

The unexpected relationship in 1979-80 might have happened for two reasons. Firstly, the method used in measuring the number of unemployed people might be wrong, because it takes into account only the number of the people who lost their jobs and does not take into account the others who are looking for work and could not get any job. This method in counting the unemployed people might produce inaccurate results.

Secondly, the growth in output in that year might be much higher than the growth in productivity. On looking at Table 5.3 we found that the total output in 1978-79 was 13,363,330 tonnes while it was 14,200,954 tonnes in 1979-80. This means that the increase in output between these two years was 837,624 tonnes. This increase in output was much higher than the increase in output between any other two years. This high increase in output might be responsible for the need for more workers to collect waste, although there was an increase in productivity in that year.

So in general, we notice that the growth in productivity in waste collection in England and Wales in 1978-79 till 1983-84 was nearly always accompanied by an increase in unemployment.

5.5 Summary and Conclusion

It is hypothesized at the beginning of this chapter that the growth of productivity in waste collection has to be accompanied by a reduction in costs per tonne, reduction in costs per person served, an increase in wages and salaries and an increase in the number of unemployed.

To examine this hypothesis in England and Wales in 1978-79 till 1983-84, the following factors are measured. These factors are: (1) the rate of growth of productivity, (2) the rate of growth of costs per tonne, (3) the rate of growth of costs per person served, (4) the rate of growth of wages and salaries, and (5) the rate of unemployed people.

First of all, it is found that there was always a positive rate in growth of productivity in each year of the period of study. That growth of productivity was compared with the growth of the other factors. The results of these comparisons are as follows.

The growth of productivity was almost always accompanied by reductions in costs per tonne and costs per person served. These reductions in costs were what the central government, tax payers, consumers, voters and councillors were looking for.

The growth of productivity was almost always accompanied by an increase in wages and salaries, which was very satisfactory for the workers and their unions. But it was accompanied by an increase in the number of unemployed in this area, which was unfortunate for the workers and their unions.

Therefore, we notice in general that the growth of productivity in waste collection in England and Wales in 1978-79 till 1983-84 had its advantages and disadvantages. These advantages were the reduction in

costs per tonne, the reduction in costs per person served, and the increase in wages and salaries. But this disadvantage was the increase in the number of unemployed people in this area.

5.6 References

1. Craven, J., 1984, Introduction to Economics: An Integrated Approach to Fundamental Principles, Basil Blackwell Publisher Limited, Oxford, pp.104-5.
2. Ibid, p.104.
3. Ibid, p.93.

CHAPTER VI

CROSS-SECTION ANALYSIS FOR PRODUCTIVITY IN WASTE COLLECTION IN ENGLAND AND WALES IN 1983-84

6.1 Introduction

Accoring to Cohen & Cohen[1] multiple regression analysis is used whenever a quantitative variable (the dependent variable) is to be studied as a function of, or in relationship to any factors of interest (expressed as dependent variables).

It was shown in the previous quotation that we need to know the dependent and independent variables to build up a statistical model which expresses the relationship between these variables. In this case, we are looking to build up an equation in each area in England and Wales, which expresses the relationship between the productivity of waste collection and its independent variables.

Thus, the dependent variable which will always be used in these equations is the productivity in waste collection. But it was found in the previous two chapters that productivity in this activity is measured by using five measurements. These are (1) output per manual worker, (2) costs per tonne, (3) costs per person served, (4) the growth in wages and salaries, and (5) the growth in unemployment.

It was also mentioned in the two previous chapters that the first measurement is the most accurate one, despite its disadvantages. But it was found that this equation does not give enough indication for the different people who are interested in this area, so it was recommended to use the other four measurements in addition to the output per manual worker.

Furthermore, the previous two chapters show that central government, taxpayers, consumers, voters and councillors are interested in using the costs per tonne and the costs per person served, while the workers

and their unions are interested in using the growth in their wages and salaries and the growth in the unemployment rate.

The majority of the people are interested in using the costs per tonne and costs per person served, rather than the other measurements, because the reduction in them both could mean the reduction in taxes, rates and grants, the improvement in the quality and quantity of services in which the consumers can receive, better reputation for the councillors, and so on. So the researcher prefers to use either costs per tonne or costs per person served as a dependent variable for the model which we are going to build.

It was found that the relationship between these two measurements in waste collection in England and Wales, was very high in the period which started in 1978-79 till 1983-84. Therefore it is seen that the use of one of them is the other side of the coin of the other, and it is recommended to use one only.

It is expected that the use of costs per person served is clearer than the costs per tonne, in achieving its purposes for the different people, because the reduction in costs per tonne might not mean anything for these people if it is not accompanied by the reduction in costs per person served.

Thus the researcher prefers to use costs per person served as a dependent variable in this case, and its independent variables will be shown in the next part of this chapter which is called the Variables and the Hypothesis.

6.2 The Variables and the Hypothesis

The dependent variable in this case is the cost per person served (X_1), and the independent variables are shown as follows:

The first variable is the method of collection (X_2). The methods of collection which are used in England and Wales, as mentioned earlier, are (1) backdoor collect and return, (2) kerbside system, (3) other collect and return, (4) skip system, (5) other normal methods, and (6) special collection.

In some of these methods the collection crew have to do a heavier job than others. In some of them they have to collect waste from each house (backdoor system), while in some others they have to collect waste from some points of collection in each street (kerbside system). In some of them the collection crew have to return the dustbin back to its place, and in some others they are not responsible for this.

The heavier the work to be done by each collection crew, the higher the costs of collection and also the higher the costs per person served. So it is hypothesised in general that the relationship between the methods of collection from one side and the costs per person served from the other has to be a positive relationship. This means that the more costly the method of collection the more cost per person served.

The second variable is the frequency of collection (X_3). Waste is collected in England and Wales once a week, less than once a week, and twice a week or more. It is expected that the more frequent the collection means more costs, because this needs more vehicles, more workers' hours, more wages and salaries, more vehicle maintenance and so on. This view is supported by Feldman when he points out that :

> "Studies of the Chicago collection system suggest an increase in frequency of collection from one to two times per week produces increases in per capita refuse production. These increases ranged from 21 to 63 per cent."(2)

From the above discussion it is hypothesised in general that the relationship between the frequency of collection from one turn, and costs per person served from the other, has to be a positive relationship.

The third variable is the output per manual worker (X_4). It was found in the previous chapter that the growth in this variable from one year to another in England and Wales was always accompanied by a decrease in costs per person served.

So it is hypothesised that the relationship between the output per manual worker and the cost per person served has to be a negative relationship. This means that the increase in one of them has to be accompanied by a decrease in the other, and vice versa.

The fourth variable is the average wages and salaries for workers and employees (X_5). Wages and salaries always represent a large part of the total costs of waste collection, because this activity is, as mentioned before, a labour-intensive activity. So this variable is expected to have a great effect on total costs of this activity, and the increase in this variable is expected to be accompanied by an increase in the total costs.

Therefore it is hypothesised in general that the relationship between the average wages and salaries from one side, and the costs per person served from the other, has to be a positive relationship.

The fifth variable is the average distance to disposal unit (X_6). This distance has an impact on the time spent on hauling the load to the disposal unit, dumping it and returning back to the collection route. The greater the distance to the disposal unit the more time is needed to dispose, dump and return back, and this means more costs in collecting waste. In this case Clark, et. al., point out that :

> "Haul distance has an effect on collection because of its relation to unproductive collection time. The longer the distance to the disposal site, the less time available for solid waste collection."(3)

From this quotation it is shown that a greater distance to the disposal unit means less time available to collect waste. This means we need more vehicles, more workers and more time to collect waste, which means on the other hand, an increase in total costs and also in costs per person served.

So it is hypothesised in general that the relationship between the average distance to the disposal unit from one turn, and the costs per person served from the other, has to be a positive relationship. This means that an increase in the former has to be accompanied by an increase in the latter and vice versa.

The sixth variable is the crew size (X_7). The crew size means the number of manual workers per vehicle. The crew always consists of one driver or more and one loader or more. The increase in the number of collection crews has two different effects on the costs of collection, and this will be shown as follows.

On the one hand the increase in collection crews might increase the total costs because of the increase in wages and salaries which are

paid to the manual workers, especially in England and Wales, where manual workers represent a high percentage of its workers and where wages and salaries represent a high percentage of waste collection costs, as mentioned before. This increase in total costs occurs if some of the workers are without work at some of the vehicle stops.

On the other hand the increase in collection crews might reduce the total costs, if the quantity of waste which is collected in each stop is very big and needs more collectors to collect it quickly. In this case more collectors means the reduction in time at each stop which could mean the reduction in total costs.

Therefore it is hypothesised in general that the relationship between the crew size from one side and the costs per person served from the other side, might be positive and might be negative. This means that the increase in crew size might be accompanied by an increase or decrease in costs per person served.

The seventh variable is the density of population (X_8). This variable has two different effects on the costs of collection. On the one hand the higher the density of population could decrease the total costs of collection, because of the utilisation of the economy of scale and the economy of contiguity. In this case Edwards & Stevens point out that:

> "Increasing the number of households served by a given collector should lower average collection cost because of economics of scale as well as because of economies of contiguity."(4)

In the same case Feldman (5) notes that a higher density in population leads to a higher pickup density and he adds that the closer the pickup locations to each other the shorter the distance the vehicles have to

be driven between locations. This view is supported also by Hirsh when he suggests that :

> "Clearly the closer the various pickup locations, the less time is taken up by collection crews walking from truck to location, and by trucks driving from location to location."(6)

On the other hand the higher density in population could increase the costs of collection, because of the higher traffic congestion which means more time is needed to move from one unit to another. This view is supported by Kitchen when he argues that :

> "A further consequence of high population density is that the higher levels of congestion associated with it would lengthen the time- distance between pickup units, and the disposal site."(7)

From the above discussion it is hypothesised that the relationship between the density of population and the costs per person served might be negative and might be positive. This depends on which side has a greater influence on costs of collection. If the effect of the level of traffic congestion is higher than the influence of the economy of scale and the economy of contiguity, the relationship will be positive and vice versa.

The eighth variable is the use of more technologised vehicles (X_9). It is expected that using more of this type of vehicle, the costs of collection will be less because of the following reasons.

Firstly the highly technologised vehicles are expected to be faster than the other vehicles in moving from one collection unit to another and from the last collection unit to the disposal site.

Secondly the average capacity of the highly technologised vehicles is expected to be more than the other vehicles. This means less travelling numbers to the disposal site.

Thirdly the crew size in the more technologised vehicles is expected to be less than the other vehicles, because some of the work is done mechanically in these vehicles. For instance, the containers in some of these vehicles are emptied mechanically.

Fourthly the use of more technologised vehicles means less repairs, less maintenance and fewer breakdowns.

Fifthly it is expected that the more technologised vehicles are the safer they are because they are better equipped than the other vehicles. This means fewer accidents, injuries, and so on.

From the above discussion it is hypothesised that the relationhip between the use of highly technologised vehicles on one hand and costs per person served on the other, has to be a negative relationship. This means that the increase in the use of highly technologised vehicles means the reduction in costs per person served.

The ninth variable is the type of waste (X). The waste in England and Wales is divided into three types. These are household, commercial and industrial waste. It is expected that the increase in commercial and industrial waste means the increase in total costs of waste collected for two reasons.

These are (1) commercial and industrial waste have different kinds of waste, each of which might need different equipment, procedures or disposal sites, and (2) commercial and industrial waste needs to be

collected more frequently than household waste.

In this case Hirsch points out that :

> "It is useful to distinguish between residential refuse collection on the one hand and industrial refuse collection on the other. The two usually are carried out separately and the latter takes place virtually on a daily basis."(8)

In the same case Schreiner, Muncrief & Davis (9) note that commercial collections require more time for hookups of the containers to the hydraulic system and more frequent trips to the disposal site.

From the above discussion, it is hypothesised that the relationship between commercial waste (including industrial waste) and costs per person served has to be a positive relationship. This means that the greater the commercial waste, the greater the cost per person served.

The tenth variable is the average income per person (X_{11}). It is expected that higher incomes mean higher consumption of the different kinds of goods, which means on the other hand an increase in quantity of waste.

This view is supported by Feber (10) when he argues that many studies were carried out to study the relationship between aggregate consumption and aggregate income, and he adds that these studies confirmed this relationship. In the same case Collins & Downes (11) note that the higher income households are expected to generate more garbage than lower income people.

Furthermore, Kemper & Quigley point out that :

> "rising household incomes have led to increased consumption of all types of goods, especially disposable goods, which has increased the quantity of refuse generated as a by-product of consumption."(12)

From the above discussion it is shown that an increase in income means an increase in consumption, especially disposable goods. This means more waste and also higher costs in collecting them. Therefore it is hypothesised that the relationship between the level of income from one side and the costs per person served has to be a positive relationship.

The eleventh variable is the methods of storage which are used in collecting waste (X_{12}). These methods in England and Wales are dustbins, disposable sacks, bulk storage containers and others. The use of disposable sacks rather than the other methods might increase or decrease the cost of collection.

On the one hand these sacks are only used once and we have to pay for them each time, while the other methods are used for a longer period of time (sometimes for several years). Therefore the use of disposable sacks might be more costly than the other methods.

On the other hand the use of these sacks is handled easier than the other methods and at the same time it saves some steps in collecting waste compared with other methods. In the other methods the following jobs have to be done in collecting waste: (1) collect the containers or dustbins, (2) empty them into the vehicle, and (3) return them back to their places or to any other place, whereas in the method of disposable sacks we have only to collect and put them into the vehicles.

Due to the advantages of using disposable sacks in collecting waste, the productivity of this method is expected to be higher than the other methods which could reduce the costs of collecting waste. This view is supported by Savas, et. al., when they point out that :

> "Using paper or plastic bags instead of returnable containers can reduce collection time because they are one-way saving the time involved in emptying a container. This translates into considerable manpower cost reductions."(13)

From the previous discussion it is hypothesised that the expansion of using disposable sacks might have a negative or positive effect on the costs per person served. If the increase in costs is higher than the increase in productivity as the result of using this method, it is expected that this relationship has to be positive, and vice versa.

The twelfth variable is the provider of this service (X_{13}) which is the public sector through the local authorities' agencies and the private sector (contractors in England and Wales).

It was mentioned earlier that it is expected that the efficiency of the public sector in running any activity is less than the efficiency of the private sector, and it was mentioned earlier also that the contract out system has more advantages in running this activity than the local authorities.

In this case Savas (14) made a comparison study between the costs of waste collection in private and public sectors. This study is entitled "Comparative Costs of Public and Private Enterprise in a Municipal Service".

In this study Savas compared the results of 8 studies which were done in this case in U.S.A., Canada and Switzerland. The results of this

study are as follows: (1) the costs per person served in a contract system is less costly than the municipal collection in five of these studies, (2) the costs per person served in both cases are equal in two of these studies, (3) the costs per person served in the public sector is less than the contract system in only one of these studies.

Accordingly, the majority of previous studies confirmed that the private sector is less costly than the public sector in handling this activity. So it is hypothesised that the expansion of using the contract-out system means less costs per person served, and vice versa.

The thirteenth variable is the reliability of the removal of the service (X_{14}). The more reliable the collection of waste needs more time to be sure that all the waste is collected and is not spread into the street and does not cause noise. The more time needed to collect waste the higher the costs.

Therefore it is hypothesised that the relationship between this variable and the costs per person served has to be a positive relationship.

The fourteenth variable is the nature of the city (X_{15}). This variable contains many components which are : (1) the overall topography or configuration of the district, (2) is the district hilly or flat?, (3) the rainfall, average wind speed, temperatures, and other climatic factors, and (4) the type of district - is it seaside, holiday town, industrial town, agricultural town, mining town, etc.

Each one of these components has its impact on the costs of collection. Some of them influence the quality and quantity of waste, such as the type of district. Some others affect the speed of carrying out this

activity such as the climatic factors and topography of the district.

The impact of each of these components on costs of collection varies from one component to another. So it is hypothesised that the relationship between this variable and the costs per person served might be negative or positive.

The fifteenth variable is the method of financing this activity (X_{16}). This service is financed by taxes and rates, or by a direct charge from the consumer. The use of any one of these has two different effects on costs of collection compared with the other.

For instance the use of general resources (taxes and rates) to finance this activity saves some costs which are essential in the other method. These costs are collecting charges from the consumers (direct charge system).

At the same time the use of taxes and rates might be responsible for the increase in collection costs because in this case the consumer is willing to produce more waste which does not cost him any additional money. This view is supported by Wertz when he points out that :

> "Whereas financing by general taxation promotes social economy in collecting whatever refuse households produce, it simultaneously promotes social diseconomy in abetting their overproduction of refuse. The argument begins once again with the understanding that the price charged for putting out additional quantities of refuse for public collection and disposal is, for any one person, zero."(15)

In the same case Wertz (16) adds that to induce a household to produce an efficient and smaller quantity of refuse, it is necessary to charge them.

From the previous discussion it is hypothesised that the expansion of using either taxes and rates or direct charge, might have a negative or positive relationship with costs per person served.

The sixteenth variable is management activities (X_{17}). The management of any provider of this activity can use the following methods and techniques. These are: modern techniques for personnel administration, planning and programming, scientific job analysis, route determination, field reporting and costs analysis.

It is expected that using these methods in this activity can improve the efficiency of doing this activity, which means the reduction in its costs. So it is hypothesised that the relationship between applying the new methods of management and costs per person served has to be a negative relationship.

6.3 The Ideal Model

The ideal model is the model which contains all the independent variables, which have an impact on the dependent variables. From the previous discussion of the dependent and independent variables, the ideal model is presented as follows:

$$X_1 = F(X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}, X_{14}, X_{15}, X_{16}, X_{17})$$

where :

X_1 = the costs per person served,

X_2 = the methods of collection,

X_3 = the frequency of collection,

X_4 = the output per manual worker,

X_5 = the average wages and salaries,

X_6 = the average distance to disposal unit,

X_7 = the crew size,

X_8 = the density of population,

X_9 = the more technologised vehicles,

X_{10} = the type of waste,

X_{11} = the average income per person,

X_{12} = the methods of storage,

X_{13} = the provider of the service,

X_{14} = the reliability of the removal of the service,

X_{15} = the nature of the city,

X_{16} = the methods of financing this activity, and

X_{17} = the management activities.

6.4 The Variables' Measurements

From the previous discussion it was found that there are seventeen dependent and independent variables, each of which needs to be measured to test our hypothesis and to build up a statistical model. Some of these variables are measured directly and others need to be measured indirectly because of the absence of a direct measurement for them.

The variables which will be measured indirectly are (1) the methods of collection, and (2) the frequency of collection. Therefore, this part is divided into 3 sections : (1) measuring of the methods of

collection , (2) measuring of the frequency of collection and (3) measuring of the other variables

6.4.1 The Measuring of the Methods of Collection It was found that the methods of collection which are used in England and Wales in 1983-84 vary according to the type of waste (household and commercial) The methods which are used to collect household waste are mentioned in Columns 22 , 23 , 24 and 25 in Appendix B , while the methods which are used to collect commercial waste are mentioned in Columns 26 , 27, 28, 29 , 30 and 31 in Appendix B.

So we started at the beginning to distinguish between the districts according to the majority of their types of waste. If the majority is household waste we depend on the methods of collection of household waste and if the majority is commercial waste we depend on the methods of collection of commercial waste.

The percentages of waste collected according to the type of waste are mentioned in Columns 13, 14,and 15 in Appendix B. The first one represents household waste while the latter two represent commercial and industrial waste. The latter two are added to each other to represent commercial waste which includes industrial waste in this case.

It was found that the data about the type of waste is not available in some districts. and in some others their waste is divided equally between household and commercial. In these cases the type of waste is considered to be the type of waste which represents the majority in each county.

After choosing the methods of collection of each district, the value of each method in each area is measured according to the following steps.

The first one is to measure the value of each method according to the average costs per person served in the districts which is applying the method of collection by 100%, with the system of once a week by 100%.

The main reasons for choosing the districts which are applying the system of once a week by 100% are (1) to be sure that the frequency of collection is constant when we started to evaluate the methods of collection, and (2) to find many districts which are applying this system with 100%, because it is found that the majority of the districts in the four areas apply this system with 100%.

The second step is applied only if we could not find any district which is applying only one method of collection with 100%. In this step we found three cases. The first case is applied when there is one district or more which applies one unknown method with another one or more which their values are known now (because these values are measured in the previous step).

By taking into account the percentage of applying each method and the costs per person served, we can build up a linear equation of first degree in each district. Each equation has two or more variables, in one of them the value is unknown, in the others their values are known.

By making substitutions by the value of the known methods, we can obtain the value of the unknown method in each district. The average of these values is used to represent the value of the unknown method.

Sometimes it is found that the number of districts which could be used to evaluate one method of collection is very big. This happened especially in Non-Metropolitan Districts - England. In this case we prefer to choose samples from these districts. In choosing these

samples we preferred to choose the districts which apply the method of collection with a higher percentage than the others, because it was found that the higher percentage of applying any method the more accurate the results.

The second case is applied when the value of two methods of collection are not known in some of the districts. In this case we build up a linear equation of first degree with two unknown methods in each district taking into account the percentage of applying each method and costs per person served.

By taking every two equations and making substitutions between both of them, we can measure the value of each unknown method. The average value of each method is used to represent the value of this method.

The third case happened in one district only. This district is called Calderdale in Metropolitan Districts. This district applied the kerbside system and the skip system more than the other methods whose values are known. These two methods of collection are not used in any other district in this area.

Therefore, we cannot measure their values in this area because of the availability of only one equation with two unknown values while we need two equations. In this case we prefer to depend on their values in London Boroughs which are £4.20 for kerbside system and £7.70 for skip system.

As the result of applying the previous steps within their cases, it was found that the values of the methods of collection are as follows:

Table 6.1 The Values of the Methods of Collection in the Four Areas in England and Wales in 1983-84.

£

	London Boroughs	Metropoli-tan Districts	Non-Met Districts England	Non-Met Districts Wales
Backdoor system	8.44	9.49	9.05	10.89
Skip system	7.70	7.70	7.68	6.28
Kerbside system	4.20	4.20	6.05	7.64
Other collect & return	34.00	4.85	9.35	8.63
Other normal methods	30.71	6.24	8.61	5.23
Special collection	18.65	10.85	12.89	12.46

Note: These values are measured indirectly by the steps which were mentioned before. Therefore they are considered as kinds of dummy values.

According to these values and the percentage of applying each method in each district, we measured the values of the methods of collection in each of these districts.

6.4.2 The Measuring of the Frequency of Collection: To measure the values of the frequency of collection, we largely depend on the same steps which are used to measure the values of the methods of collection. with only two differences. These are:

Firstly. in measuring the values of the methods of collection we preferred to make the frequency of collection constant by choosing those which are applied with the system of once a week with 100%. But we could not use the same method when we started to measure the values

of the frequency of collection.

We could not make the methods of collection constant in this case because of the unavailability of a large number of districts which apply the same method of collection with 100%. Therefore the districts are chosen in this case according to their frequency of collection, and without taking into account the percentage of applying any method of collection.

Secondly, we found that the number of cases which were used in measuring the values of the frequency of collection were less than the number which were used in evaluating the methods of collection.

It was found that these cases were : (1) the average costs per person served which apply the frequency of collection with 100%. In this case we are faced with only one problem. This occurred when we started to evaluate the value of once a week in Non-Metropolitan Districts - England. It was found that the number of districts which apply this system with 100% is very high.

So we preferred to measure the value of this system by the average costs of a sample of these districts. This sample was chosen from the districts which apply this system with 100% and are included in the sample of the whole area.

And (2) the measurement of the value of the frequency of collection in the districts which apply two or more systems of collections, one of them is an unknown value, while the values of the others were measured previously.

The value of the unknown system is measured in each district by building up some linear equations taking into account the percentage of applying each system and the costs per person served. By making substitutions in the known values we can obtain the values of the unknown systems in each district. The average of these values is taken to represent the value of the system in each area.

The samples are chosen in this case according to the size of population and according to the percentage of applying any unknown system. We preferred to use the districts which apply any system with a higher percentage than the others for the reasons which were mentioned earlier.

As the result of applying the previous steps with their cases, it was found that the values of the frequency of collection are shown in Table 6.2.

Table 6.2 The Values of the Frequency of Collection in the Four Areas in England and Wales in 1983-84.

£

	London Boroughs	Metro-politan Districts	Non-Met Districts England	Non-Met Districts Wales
Twice or more	25.82	28.68	10.70	9.19
Once a week	11.96	9.36	8.41	9.11
Less than once	-	-	5.11	7.86

Note These values are measured indirectly by the steps mentioned before. Therefore they are considered as kinds of dummy values.

According to these values and the percentage of applying each system, we measured the values of the frequency of collection in each district.

6.4.3 The Measuring of the Other Variables: The values of the other variables are measured as follows.

1. The costs per person served (X_1), is measured by dividing the total costs by the total number of population. By looking to the data available about waste collection in England and Wales in 1983-84 which are shown in Appendix B, we notice that the number of population is mentioned in Column 1 in Appendix B, while there are two columns about expenditure. The first column is no. 81 in Appendix B which is entitled gross expenditure, and the second is no. 95 in Appendix B which is entitled total net expenditure.

As mentioned before, the gross expenditure is expected to be more representative to the total costs than the net expenditure, because there are many variables included in measuring the net expenditure, which are not related to the quantity of waste collected.

Therefore we preferred to measure the costs per person served by dividing the gross expenditure which is mentioned in Column 81 in Appendix B by the total number of population which is mentioned in Column 1 in Appendix B.

2. The output per manual worker (X_4) is measured by dividing the total weight of waste which is mentioned in Column 8 in Appendix B by the total manual workers. Manual workers in England and Wales in 1983-84 consist of the manual workers in local authorities, and the total contractors' workers (because it is mentioned in this data that all contractors' workers are manual workers).

The latter is mentioned in Column 71 in Appendix B while the previous one consists of drivers, loaders, drivers/loaders and other manual workers, and they are mentioned in Columns 64, 65, 66 and 67 in Appendix B. So the total manual workers is measured by adding together the figures in Columns 64, 65, 66, 67 and 71 in Appendix B.

3. The average wages and salaries (X_5) is measured by dividing the employees' expenditure which is mentioned in Column 72 in Appendix B by the total number of staff employed which is mentioned in Column 70 in Appendix B.

In this case we could not add the number of contractors' manual workers to total staff employed because their wages and salaries are not included in total employees' expenditure. They are included in total contractors' expenditure. therefore we could not know the amount of contractors' wages and salaries.

Furthermore as the result of the absence of the data about contractors' wages and salaries we could not measure the average wages and salaries in the districts which apply the contract system.

4. The average distance to disposal unit (X_6) is not available in the statistics for 1983-84. But it is found that this data is available in the statistics for 1982-83 in Column 55.

It is expected that this data has not changed too much during these two years, so we preferred in this case to depend on 1982-83 data than to eliminate this variable completely.

5. The crew size (X_7) is measured by dividing the total manual workers by the total number of collection vehicles. The total number of manual workers are measured, as mentioned before, by adding together the local

authorities' manual workers, to contractors' manual workers. This data is mentioned in Columns 64, 65, 66, 67 and 71 in Apendix B.

The total number of collection vehicles are measured by adding together the total number of local authorities' vehicles which are mentioned in Column 59 in Appendix B, to the total number of contractors' vehicles which are mentioned in Column 63 in Appendix B.

If the service is supplied only by the local authority we depend only on the local authorities' data, and if the service is supplied by the contract-out system we depend only on the contractors' data.

6. The density of population (X_8) is already available in Column 3 in Appendix B, so it does not need any kind of measurement.

7. The use of more technologised vehicles (X_9): By looking to the data available, we found that the vehicles which are used in collecting waste in England and Wales in 1983-84 are divided into two types.

The first type is the specialist vehicles which are mentioned in Columns 56 and 57 in Appendix B in local authorities collection vehicles, and in Columns 60 and 61 in Appendix B in contractors collection vehicles. The second type is the general purpose collection vehicles which are mentioned in Column 58 in Appendix B in local authorities collection vehicles, and Column 62 in Appendix B in contractors' collection vehicles.

It is expected that the use of specialist vehicles is more productive and cost less than the use of general purpose vehicles, due to many reasons. These reasons are mentioned by Hagerty, Pavoni & Heer when they point out that :

> "It is designed for convenience in manual loading and ease of mechanical unloading; appurtenances such as handholds, steps, mirrors, etc., make the designed collection truck safer for use than a conventional one pressed into service as a refuse collection vehicle."(17)

It is shown from the previous discussion that we have to distinguish between specialist vehicles and general purpose vehicles, because the first type is seen as more technologised than the second. But by looking to the data about the collection vehicles in England and Wales in 1983-84, we found that the number of general purpose vehicles in each district is very few and there are many districts not using this type of vehicle. Therefore it is expected that the division between these two types of vehicles in England and Wales in this year, will be worthless.

But by looking to the specialist vehicles in England and Wales which are mentioned in Columns 56, 57, 60 and 61 in Appendix B we found that they are divided into specialist vehicles with compaction and specialist vehicles without compaction. It is expected that the specialist vehicles with compaction are more productive and less costly than any other vehicles, because waste in the other vehicles is spread in the street while the vehicles are moving around from one place to another. The waste which is spread needs to be collected again and that means more costs in collecting waste.

Therefore we prefer to consider that the specialist vehicles with compaction are more technologised than all of the other vehicles. This variable is measured by the percentage of use in this type of vehicle to the total number of vehicles in each district. Moreover, we preferred to change the name of this variable to express the real method which is used in measuring it. The new name is the use of

specialst vehicles with compaction.

8. The type of waste (X_{10}) is measured by adding together the percentage of commercial waste to the percentage of industrial waste which are mentioned in Columns 14 and 15 in Appendix B. The main reason for this, as mentioned before, is that it is expected that these two types of waste are more costly than household waste.

It is recommended that the name of this variable has to be changed also, to be more representative of the method which is used in measuring it. The new name is the rate of commercial waste, taking into account that industrial waste is included with commercial waste.

9. The average income per person (X_{11}) is not available in the data available about waste collection in England and Wales in 1983-84. As mentioned before this variable is highly related to the level of consumption and also to the quantity of waste, so the average quantity of waste is seen as representative of the average income per person.

The average quantity of waste is measured by dividing the total quantity of waste in tonnes which is mentioned in Column 8 in Appendix B, by the total number of population which is mentioned in Column 1 in Appendix B. The name of this variable is changed too to express the method which is used in measuring it. The new name is the quantity of waste per head of population.

10. The methods of storage (X_{12}) is measured by using the percentage of waste which is collected by disposable sacks, because the use of these sacks has a different nature to the other methods.

The data about this variable is mentioned already in Column 17 in Appendix B. But we prefer to change its name to the use of disposable sacks in collecting waste. The new name is expected to be more representative of this variable than the previous one.

11. The provider of the service (X_{13}) could be measured by using dummy values. One value for each provider. By looking at data available about England and Wales in 1983-84, we noticed that the providers of this service are the local authorities and the contractors. So we can evaluate one of them by the value 0 and the other by the value 1.

But we noticed also from this data that the contractors are the providers of this service for only 22 districts, while the total number of the districts which are included in these statistics are 368. Furthermore we noticed too that the contractors' costs are £9,501,000, while the gross expenditure in that year was £440,745,000.

From the above figures we found that the number of districts which apply the contract system represents only 5.9% of the total number of districts, and the contractors' costs represent only 2.15% of the gross expenditure.

It is shown from the previous discussion that this service is provided mainly in England and Wales in 1983-84 by the local authorities, and the contract system has very little impact on its activities. Therefore it is expected that this variable has no significant influence on costs per person served, and so we prefer to drop it from our variables.

12. The reliability of the removal of the service (X_{14}) could be measured by the number of telephone calls per householder, or by the

number of written complaints per household, or by both. This measurement is always used to represent how satisfied the consumers are by the reliability of providing this service.

But because of the unavailability of this data, this variable is eliminated from our independent variables.

13. The nature of the city (X_{15}): This variable has, as mentioned before, many components. Some of these could be measured by real values such as climatic factors, some others could be measured by using dummy values such as the type of city and some others could not be measured at all, because of the absence of reliable data about them, such as the configuration of the city.

Our study is divided as mentioned before into four areas. These are London Boroughs, Metropolitan Districts, Non-Metropolitan Districts - England and Non-Metropolitan Districts - Wales. It is expected that there are no big differences in each area in their climatic factors, in their configurations, in their types, and so on. Therefore, we prefer to drop this variable, also because it is expected that its impact on costs per person served is not highly significant moreover to the difficulty in measuring some of its variables.

14. The methods of finance (X_{16}) could be measured by using dummy values. One dummy value for the charge system and another for the general finance system (taxes and rates).

But it is found that the same methods are always used in each area in England and Wales. The household waste is always financed by taxes and rates, while the commercial waste is always financed by the direct finance system (charge system).

Therefore it is expected that the impact of this variable in costs per person served is insignificant, so we prefer to exclude this variable from our independent variables.

15. The management activities (X_{17}) could be measured by using dummy values for each method of management activities.

We prefer to drop this variable from our independent variables, because we think that we cannot find any reliable data about this variable in each district in each area.

6.5 The Expected Model

As mentioned before the ideal model includes all the independent variables. Some of these variables are dropped because of the unavailability of their data, or because of the expected insignificance of this variable, or because of some other reasons. The names of some other variables are changed to represent the methods which are used to measure them.

So the independent variables in the expected model vary from the independent variables in the ideal model. The variables which are included in the expected model are as follows :

1 The methods of collection (X_2)

2. The frequency of collection (X_3)

3. The output per manual worker (X_4)

4. The average wages and salaries (X_5)

5. The average distance to disposal unit (X_6)

6. The crew size (X_7)

7. The density of population (X_8)

8. The use of specialist vehicles with compaction (X_9)

9. The rate of commercial waste (X_{10})

10. The quantity of waste per head of population (X_{11}), and

11. The use of disposable sacks (X_{12})

The relationship between costs per person served from one side and the independent variables from the other, is expected not to be a linear relationship because most of the economic relationships are nonlinear. This view is supported by Johnston (18) when he points out that in the absence of any firm theoretical indications, an inspection of the scatter diagram may indicate the inappropriateness of attempting to fit a linear relationship.

It is expected also that this relationship has to be curvilinear, because the relationships between costs per person served and most of the independent variables are expected not to be constant (the increase in the independent variables is accompanied by an increase in the dependent variables but not by the same rate). In this case Cohen & Cohen (19) note that if the relationship between the dependent and the independent variables is not constant, this relationship is a curvilinear relationship.

From the previous discussion it is shown that the relationship between costs per person served and the independent variables is a curvilinear relationship and not linear. Therefore, we have to add one or more squared variables to the previous variables, to make this relationship in a curvilinear form.

Most of the previous studies used only one squared variable such as Kitchen [20], Clark, et. al. [21] and Hirsch [22]. But in this research we preferred to square more than one variable, to give the squared variables more probability to be presented in the second step of building the equation up. This step which depends on the variables which are statistically significant by 95% or by 99%, as mentioned in the first chapter of this thesis.

The researcher squared only three variables, two of them are the variables which measured indirectly, and the third was chosen randomly from the remaining variables. The squared variables are: X_2^2 (the methods of collection)^2, X_3^2 (the frequency of collections)^2, and X_8^2 (the density of population)^2.

From the previous discussion the expected model is declared as follows:

$$X_1 = f(X_2, X_2^2, X_3, X_3^2, X_4, X_5, X_6, X_7, X_8, X_8^2, X_9, X_{10}, X_{11}, X_{12})$$

6.6 The Actual Models in England and Wales in 1983-84

In this part the dependent and independent variables are measured in each area in England and Wales, according to the methods which were

mentioned earlier. These variables are entered in the computer to measure the correlation coefficients and to build a statistical model in each of these areas.

The correlation coefficients are measured to test our hypothesis about the relationship between the costs per person served and the independent variables. The statistical models are built for two reasons. These are (1) to know how satisfactory our variables are, and (2) to be used for anticipating costs per person served in the future.

Therefore, this section is divided into four parts, each part declaring the actual results in each area in England and Wales, as shown in the following parts of this chapter.

6.6.1 The Actual Models in Waste Collection in London Boroughs in 1983-84: The correlation coefficient between the independent variables and costs per person served are shown in Table 6.3 and Figure 6.1.

From Table 6.3 and Figure 6.1 we notice that all the independent variables are correlated to the costs per person served, but the strength and direction of this relationship varies from one variable to another. For instance the correlations with the waste per head of population and with the rate of commercial waste X are very strong while the relationships with the methods of collection and density of population are very low.

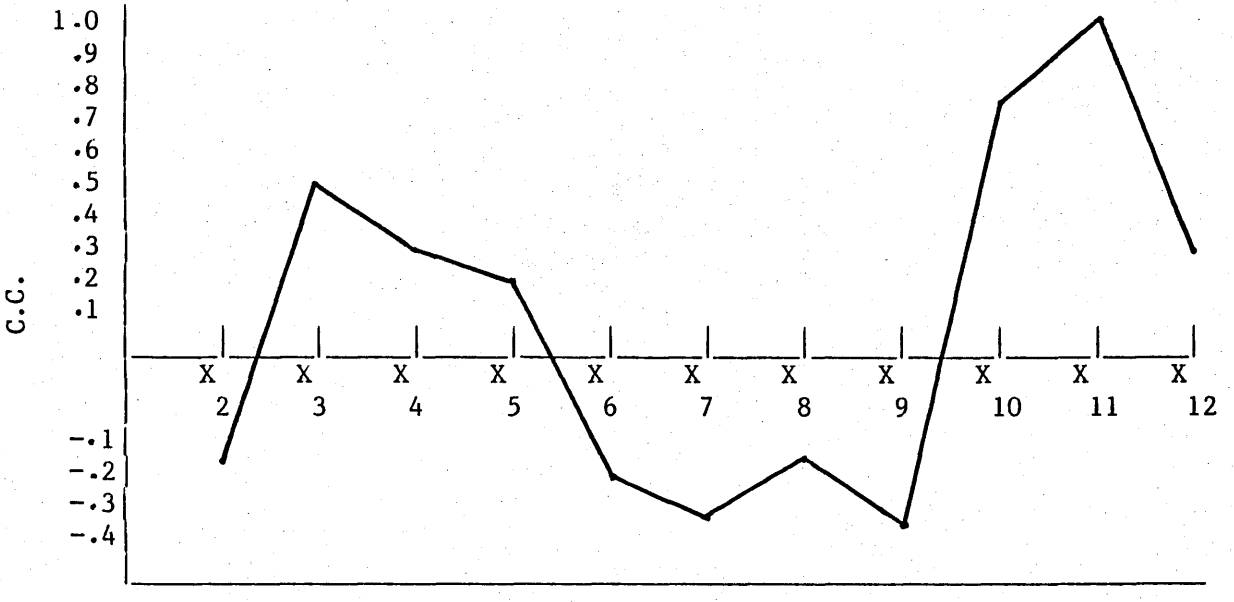
We notice also that there are three variables whose correlations are more than 50%, while all the other variables' correlations are less than 50%. Furthermore, it is shown that there are six variables positively related to costs per person served, while there are five other variables negatively related to costs per person served.

Table 6.3 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in Waste Collection in London Boroughs in 1983-84.

	r	LOS
The methods of collection (X_2)	-.17575	
The frequency of collection (X_3)	.50089	**
The output per manual worker (X_4)	.30981	*
The average wages and salaries (X_5)	.22625	
The average distance to disposal unit (X_6)	-.21698	
The crew size (X_7)	-.37242	**
The density of population (X_8)	-.16300	
The use of specialist vehicles with compaction (X_9)	-.34473	*
The rate of commercial waste (X_{10})	.78353	**
The quantity of waste per head of population (X_{11})	.99882	**
The use of disposable sacks (X_{12})	.28627	*

Note: 1. r = The correlation coefficient.
2. LOS = The level of significance.
3. ** = Significant relationship at 99% level of confidence.
4. * = Significant relationship at 95% level of confidence.

Figure 6.1 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in Waste Collection in London Boroughs in 1983-84.



Notes:
- X_2 = the methods of collection
- X_3 = the frequency of collection
- X_4 = the output per manual worker
- X_5 = the average wages and salaries
- X_6 = the average distance to disposal unit
- X_7 = the crew size
- X_8 = the density of population
- X_9 = the use of specialist vehicles with compaction
- X_{10} = the rate of commercial waste
- X_{11} = the quantity of waste per head of population
- X_{12} = the use of disposable sacks
- C.C. = the correlation coefficients

Moreover we found that there are only 8 variables whose correlations with costs per person served are statistically significant by 95% or by 99%, while all the other variables are not statistically significant by these levels of confidence.

To examine the hypothesised relationship between the independent variables and costs per person served, we have to compare our hypothesis by the actual results. At the beginning we started with the variables which are hypothesised that they might have negative or positive relationships with costs per person served. These variables are : (1) the crew size (X_7), (2) the density of population (X_8), and (3) the use of disposable sacks (X_{12}).

By looking at Table 6.3 and Figure 6.1 we notice that the relationships with density of population and crew size are negative relationships but the relationships with the latter is higher than with the previous one. The correlations with these variables are -.16300 and -.37242 respectively. It was found also that the relationship with the use of disposable sacks which is .28627 is a low positive relationship.

The negative relationship with the density of population, means that the impact of this variable in this area on the economies of scale and contiguity is higher than its impact on traffic congestion.

The negative relationship with the crew size means that the higher the crew size in this area the higher the productivity with a higher rate than the increase in their wages and salaries.

The positive relationship with the use of disposable sacks means that the increase in this variable in this area is accompaied by an increase in their costs with a higher rate than their effect on productivity.

By comparing the actual correlation coefficients for the other variables by our hypothesis, we notice that there are only three variables whose direction of correlations are different from our hypothesis. These variables are (1) the output per manual worker, (2) the average distance to disposal unit, and (3) the methods of collection.

Firstly, it is hypothesised that the relationship between the output per manual worker (productivity) and costs per person served has to be a negative relationship, but by looking at Table 6.3 and Figure 6.1, it is found that this relationship is a surprisingly positive relationship. This means that the increase in the former is accompanied by an increase in costs per person served.

The interpretation for this unexpected relationship is that it might have happened because of the increase in productivity in this area in that year might be accompanied by an increase in wages and salaries with a higher rate than the increase in productivity or it might be affected by the impact of the other independent variables.

Secondly, it is hypothesised that the relationship between the average distance to disposal unit and costs per person served has to be a positive relationship, but it is found in Table 6.3 and Figure 6.1 that this relationship is astonishingly negative. This means that the increase in this distance is accompanied by a reduction in costs per person served.

This unexpected relationship might have occurred because (1) the figures of this variable are taken from the Statistics of 1982-83. These figures may have changed in 1983-84 and could have caused the

inaccuracy of its relationship with costs per person served, and (2) the relationship with this variable might be affected by the impact of the other independent variables in costs per person served.

Thirdly, it is hypothesised that the relationship between the methods of collection and costs per peron served has to be a positive relationship, but it is shown in Table 6.3 and Figure 6.1 that this relationship is a low negative relationship. This means that the more costly the method of collection is, the less costs per person served.

The reasons for this unexpected relationship might be: (1) this variable is measured indirectly so its value might be an inaccurate value, and this might affect the relationship between this variable and costs per person served, and (2) the other variables might affect this relationship also.

To know how satisfactory these variables are, to explain the variation of costs per person served, all with squared variables are entered into the computer with a command to build up a statistical model. These variables are divided into the output of the computer (1) variables are included in the equation, and (2) variables are not included in the equation. All the independent variables are included in the equation except two variables. These are (1) the methods of collection (X_2) and (2) the frequency of collection (X_3).

The variables are entered into the equation according to the following steps: X_8^2, X_{10}^2, X_2^2, X_6, X_5, X_{12}, X_7^2, X_9^2, X_3^2, X_4, X_{11} and X_8^2. All the details about this equation are mentioned in the computer output, so we can build up an equation in this area which contains 32 boroughs. This equation is shown in Table 6.4.

Table 6.4 The Statistical Model in Waste Collection in London Boroughs (includes all the variables).

	Constant	Independent Variables												R^2	LOS	DF
		X_2^2	X_3^2	X_4	X_5	X_6	X_7	X_8	X_8^2	X_9	X_{10}	X_{11}	X_{12}			
B	.402310	-.00067 9695	.001 806	-.014 258	.0003 89597	.1124 97	-.194 380	.087 082	-.000 400820	-.002 299	-.009 767	.033 971	.008 663	.999 92	**	12-11
SEB	4.181239	.0007 2903	.001 985	.002 324	.0001 7919	.051 494	.393 600	.038 080	.0003 0303	.038 708	.015 806	.0002 3543	.010 596			
LOS				**	*	*		*				**				

Notes:
1. B = The regression coefficient
2. SEB = The standard error of regression coefficient
3. LOS = The level of significance
4. DF = Degrees of freedom
5. ** = Significant relationship at 99% level of confidence
6. * = Significant relationship at 95% level of confidence

In Table 6.4 it is shown that R^2 of this equation is .99992. This means that the variables which are included in the equation are highly satisfactory, because they explain 99.99% of the variation in costs per person served.

It is shown also in this table that this equation with (12-11) degrees of freedom is highly significant by 99%. Moreover, it is found that there are five variables which are statistically significant by 95% or by 99%, while all the other variables are not statistically significant either by 95% or by 99%.

Although R^2 of this equation is very high and it is highly significant by 99%, it is found that the number of the independent variables which are included in this equation are very big (12 variables) and it includes some insignificant variables. Therefore we prefer to build another equation with only the significant variables, which are X_4, X_5, X_6, X_8 and X_{11}. These variables are entered into the computer with another command to build up a new equation.

All these variables are included in the new equation with the following steps: X_4, X_8, X_6, X_{11} and X_5. But it is found that X_6 became insignificant in the new equation, so we prefer to build up another equation with the remaining four variables which are X_4, X_5, X_8 and X_{11}. These variables are entered into the equation according to the following steps: X_4, X_8, X_{11} and X_5. The details about the new equation are mentioned in the computer output. Therefore the new equation is built and presented in Table 6.5 as follows.

Table 6.5 The Statistical Model in Waste Collection in London Boroughs (includes the significant variables).

	Constant	Independent Variables				R^2	LOS	DF
		X 4	X 5	X 8	X 11			
B	.823446	-.018 434	.00068 2466	.047 465	.034 022	.999 66	**	(4-26)
SEB	2.041623	.002 663	.00024 288	.010 616	.0001 8422			
LOS		**	**	**	**			

Notes:
1. B = The regression coefficient
2. SEB = The standard error of regression coefficient
3. LOS = The level of significance
4. DF = Degrees of freedom
5. ** = Significant relationship at 99% level of confidence.

It is shown in this table that R^2 in this equation is still very high (.99966) in spite of reducing the number of the variables which are included in the equation from twelve variables in the previous one to four variables in this equation. This means that 99.96% of the variation in costs per person served is explained in terms of only four variables.

It is shown also in this table that this equation by (4-26) degrees of freedom is highly significant by 99%, and all of its variables are statistically significant by 99%.

Therefore, the equation which is presented in Table 6.5 is highly recommended to be used to anticipate costs per person served in waste collection in London Boroughs, rather than the previous one which is presented in Table 6.4 and which includes a large number of variables, most of which are not statistically significant either by 95% or by 99%.

6.6.2 The Actual Models in Waste Collection in Metropolitan Districts in 1983-84: To test our hypothesis in this area, the correlation coefficients between costs per person served and the independent variables are measured and presented in Table 6.6 and in Figure 6.2.

It is shown in Table 6.6 and Figure 6.2 that all of the independent variables are correlated with costs per person served but the strength of these relationships are rather low. The highest is .41561 (with the frequency of collection), and the lowest is -.02637 (with the average distance to disposal unit).

It is shown also that the correlation coefficients are positive in six of these variables, while it is negative with the other five. Furthermore, we notice that there are only three variables which are statistically significant either by 99% or 95%.

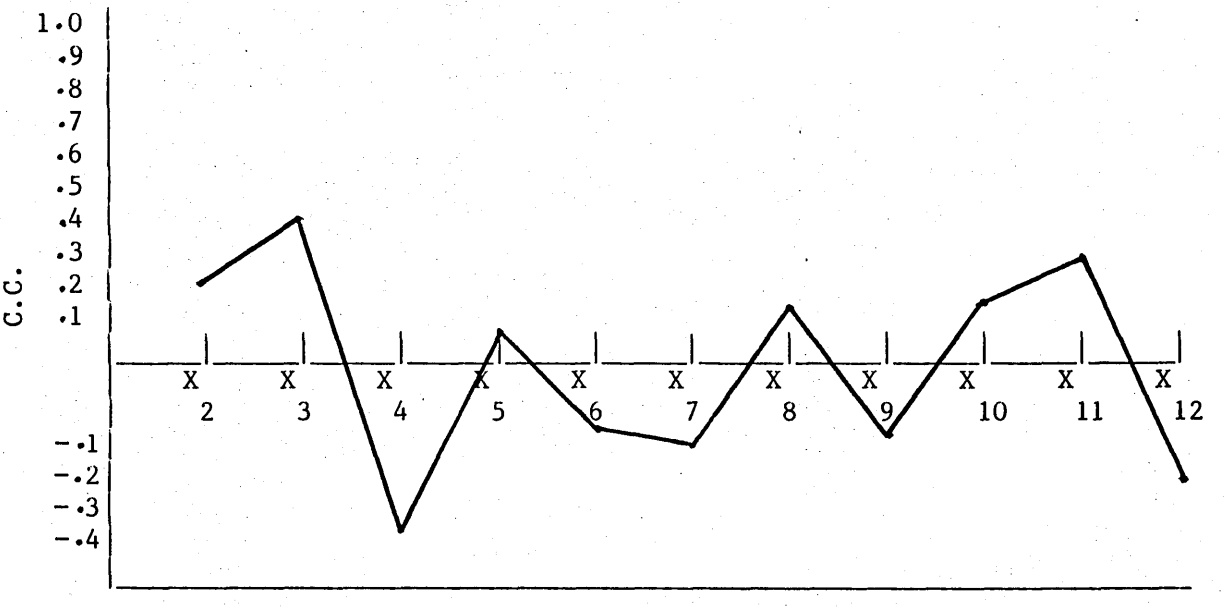
To examine our hypothesis which were mentioned earlier in this chapter, we started with the variables which have two sides of impact on costs per person served. These variables might have a negative or positive relationship with costs per person served. These variables are (1) the crew size (X_7), (2) the density of population (X_8) and (3) the use of disposable sacks ($X_{\ }$).

Table 6.6 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in Waste Collection in Metropolitan Districts in 1983-84.

	r	LOS
The methods of collection (X_2)	.24530	
The frequency of collection (X_3)	.41561	**
The output per manual worker (X_4)	-.36777	**
The average wages and salaries (X_5)	.04590	
The average distance to disposal unit (X_6)	-.02637	
The crew size (X_7)	-.09666	
The density of population (X_8)	.15744	
The use of specialist vehicles with compaction (X_9)	-.05108	
The rate of commercial waste (X_{10})	.20604	
The quantity of waste per head of population (X_{11})	.33862	**
The use of disposable sacks (X_{12})	-.14654	

Notes:
1. r = The correlation coefficient
2. LOS = The level of significance
3. ** = Significant relationship at 99% level of confidence
4. * = Significant relationship at 95% level of confidence

Figure 6 2 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in Waste Collection in Metropolitan Districts in 1983-84.



Notes:
- X_2 = the methods of collection
- X_3 = the frequency of collection
- X_4 = the output per manual worker
- X_5 = the average wages and salaries
- X_6 = the average distance to disposal unit
- X_7 = the crew size
- X_8 = the density of population
- X_9 = the use of specialist vehicles with compaction
- X_{10} = the rate of commercial waste
- X_{11} = the quantity of waste per head of population
- X_{12} = the use of disposable sacks
- C.C. = the correlation coefficients

By looking at Table 6.6 and Figure 6.2 we notice that the crew size (X_7) and the use of disposable sacks (X_{12}) are negatively correlated with costs per person served, while the density of population (X_8) is positively correlated with costs per person served.

The negative relationship with the crew size and with the use of disposable sacks means that the increase in these variables means an increase in productivity with a higher rate than the increase in their costs as the result of the increase in crews' wages and salaries or due to an increase in the disposal sacks costs.

The positive relationship with the density of population in this area means that the impact of this variable on the traffic congestion is higher than its impact on the economies of scale and contiguity.

The actual correlation coefficients of the other variables mentioned in Table 6.6 and Figure 6.2 are compared with our hypothesis. From this comparison it is found that the direction of these variables are as hypothesised with the exception of one variable. This variable is the average distance to disposal unit (X_6).

It is hypothesised that the relationship with this variable has to be positive, but it is found that this relationship is surprisingly negative. The only explanation for this unexpected relationship, as mentioned before, might be because of the inaccuracy of this variable data, or because this relationship might be affected by the impact of other variables on costs per person served.

All of the independent variables with the squared variables are entered into the computer to build up a statistical model, to find how satisfactory these variables are to explain the variation of costs per

person served. It is found in the computer output that there are some variables entered into the equation and some others are not. The variables which are not inluded in the equation are : (1) the squared methods of collection (X_2^2), and (2) the frequency of collection (X_3).

The other variables are entered into the equation according to the following steps: X_8, X_{12}, X_9, X_{11}, X_{10}, X_5, X_2, X_7^2, X_3, X_4, and X_8. All the data about this equation is mentioned in the computer output, so we can build up the equation in this area which contains 36 districts. This equation is shown in Table 6.7.

Table 6.7 shows that R^2 of this equation is equal .80331. This means that nearly 80% of the variation of costs per person served is explained in this equation, while only 20% is unexplained. Therefore the costs per person served in this area is satisfactorily explained by the independent variables which are included in this equation.

We notice from this table that this equation with (12-14) degrees of freedom is highly significant by 99%, and most of the variables are not significant either by 95% or 99% with the exception of four variables. These are (1) the squared frequency of collection (X_3^2), (2) the output per manual worker (X_4), (3) the average wages and salaries (X_5), and (4) the quantity of waste per head of population (X_{11}). These variables are statistically significant by 95%.

Because of the large number of variables which are included in this equation and because most of them are not significant, we prefer to build a new equation with fewer variables. The new equation is built by eliminating the non-significant variables.

Table 6.7 The Statistical Model in Waste Collection in Metropolitan Districts (includes all the variables).

	Constant	Independent Variables												R^2	LOS	DF
		X_2	X_3^2	X_4	X_5	X_6	X_7	X_8	X_8^2	X_9	X_{10}	X_{11}	X_{12}			
B	-19.797 441	1.824 759	.086 743	-.010 271	.0006 42679	-.031 582	.6180 55	-.170 701	.003 391	-.013 135	.057 149	.011 947	.013 396	.803 31	**	12-14
SEB	17.887 158	1.785 039	.041 277	.004 024	.0002 6984	.043 203	.687 272	.104 597	.002 429	.036 113	.037 842	.005 640	.010 714			
LOS			*	*	*							*				

Notes:
1. B = The regression coefficient
2. SEB = The standard error of regression coefficient
3. LOS = The level of significance
4. DF = Degrees of freedom
5. ** = Significant relationship at 99% level of confidence
6. * = Significant relationship at 95% level of confidence

Table 6.8 The Statistical Model in Waste Collection in Metropolitan Districts (includes the significant variables).

	Constant	Independent Variables				R^2	LOS	DF
		X_3^2	X_4	X_5	X_{11}			
B	-2.292044	.069 237	-.008 892	.0005 99634	.015 795	.628 43	**	(4-26)
SEB	2.887526	.021 851	.002 139	.0001 9649	.003 468			
LOS		**	**	*	**			

Notes:
1. B = The regression coefficient
2. SEB = The standard error of regression coefficient
3. LOS = The level of significance
4. DF = Degrees of freedom
5. ** = Significant relationship at 99% level of confidence
6. * = Significant relationship at 95% level of confidence

Therefore the variables which were entered into the computer to build the new equation are X_3^2, X_4, X_5, and X_{11}. The details about this equation mentioned in the computer printout are shown in Table 6.8.

It is also shown in this table that this equation by degrees of freedom (4-26) is highly significant by 99%, and all of the variables are significant either by 95% or by 99%. It is also shown that R^2 in this equation is .62843. This means that nearly 63% of the variation in costs per person served is explained in this equation while nearly 37%

of the variation is not explained

Although R^2 in this equation is much less than R^2 in the previous one it is recommended to be used for the purposes of anticipating costs per person served in waste collection in England and Wales in Metropolitan Districts rather than the previous one. The main reasons for this recommendation are: (1) the variables in this equation are much less than the variables in the previous one, and (2) all the variables in this equation are statistically significant by 95% or by 99% while most of the variables in the previous one are not significant.

6.6.3 The Actual Models in Waste Collection in Non-Metropolitan Districts - England in 1983-84: The correlation coefficient between costs per person served and the independent variables in this area are measured to test our hypothesis. The results are shown in Table 6.9 and Figure 6.3.

It is shown in Table 6.9 and Figure 6.3 that all the independent variables are correlated with costs per person served, but the strength of this relationship varies from one variable to another. The highest two relationships are with the methods of collection (X_2) and with the output per manual worker (X_4), whose correlations are .49965 and - .49332 respectively. The relationships with some variables are very low, such as the average wages and salaries (X_5), the density of population (X_8) and the use of disposable sacks (X_{12}), whose correlations are .06289, .06352 and -.02111 respectively.

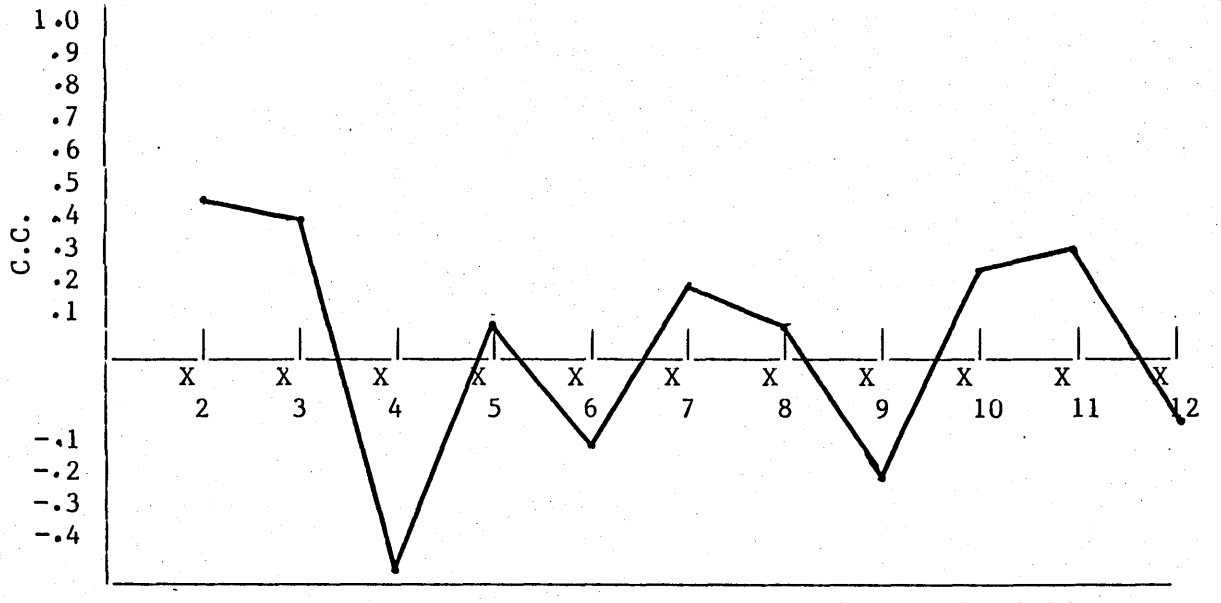
It is shown also that seven variables are positively correlated with costs per person served while the other four variables are negatively correlated with costs per person served. Furthermore it is found that

Table 6.9 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in Waste Collection in Non-Metropolitan Districts - England in 1983-84.

	r	LOS
The methods of collection (X_2)	.49965	**
The frequency of collection (X_3)	.38170	**
The output per manual worker (X_4)	-.49332	**
The average wages and salaries (X_5)	.06289	
The average distance to disposal unit (X_6)	-.10837	
The crew size (X_7)	.19340	
The density of population (X_8)	.06352	
The use of specialist vehicles with compaction (X_9)	-.19261	
The rate of commercial waste (X_{10})	.25646	*
The quantity of waste per head of population (X_{11})	.36630	**
The use of disposable sacks (X_{12})	-.02111	

Notes:
1. r = The correlation coefficient
2. LOS = The level of significance
3. ** = Significant relationship at 99% level of confidence
4. * = Significant relationship at 95% level of confidence

Figure 6-3 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in Waste Collection in Non-Metropolitan Districts - England in 1983-84.



Notes: X_2 = the methods of collection

X_3 = the frequency of collection

X_4 = the output per manual worker

X_5 = the average wages and salaries

X_6 = the average distance to disposal unit

X_7 = the crew size

X_8 = the density of population

X_9 = the use of specialist vehicles with compaction

X_{10} = the rate of commercial waste

X_{11} = the quantity of waste per head of population

X_{12} = the use of disposable sacks

C.C. = the correlation coefficients

only five variables are statistically significantg either by 95% or by 99% while the other variables are not significant.

To test our hypothesis a comparison is done between the actual correlation coefficients by our hypothesis mentioned earlier in this chapter. In this comparison we started as usual with the variables which are hypothesised to have a negative or positive relationship with costs per person served. These variables are (1) the crew size (X_7), (2) the density of population (X_8), and (3) the use of disposable sacks (X_{12}).

It is shown in Table 6.9 and Figure 6.3 that the first two variables are positively correlated to costs per person served, while the latter is negatively correlated with costs per person served. The positive relationship with the crew size means that the increase in this variable means an increase in wages and salaries with higher rates than its impact on productivity.

The positive relationship with the density of population means that the increase in this variable means the increase in traffic congestion with higher rates than its influence on the economy of scale and contiguity.

The negative relationship with the use of disposable sacks means that the expansion of using these sacks means the growth in productivity with higher rates than the increase in costs to buy these sacks.

By looking at the other variables we notice that their relationships with costs per person served are as hypothesised with the exception of only one variable. This is the average distance to disposal unit (X_6). It is hypothesised that the relationship with this variable has to be a positive relationship while it is found that the actual relationship is

negative. It is suggested, as mentioned before, that this unexpected relationship might be because of this inaccuracy of this variable data or because the other variables affect the relationship between this variable and costs per person served.

To know how satisfactory these variables are to explain the variation of costs per person served in this area, all of these variables in addition to the squared variables, are entered into the computer with a command to build up a statistical model using all these variables. It is found in the computer output that some variables are included in the equation and some others are not.

The variables which are not entered into the equation are (1) the methods of collection (X_2), and (2) the frequency of collection (X_3). All of the other variables are entered into the equation according to the following steps: X_8, X_2, X_4, X_{10}, X_5, X_6, X_3, X_7, X_{11}, X_9, X_{12}, and X_8.

The data about this equation is mentioned in the computer output so we can build up this equation which is prepared by using the data of 39 districts (sample of 268 districts). This equation is shown in Table 6.10.

From this table we notice that $\bar{R}^2$ in this equation is .74430, which means that this explains about 74% of the variation of costs per person served, while only 26% is unexplained. Therefore we can say that our independent variables are satisfactory to explain the dependent variable in this area.

We notice also from this table that this equation with (12-15) degrees of freedom is highly significant by 99%, but it is found that there are

Table 6.10 The Statistical Model in Waste Collection in Non-Metropolitan Districts - England (includes all the variables).

	Constant	Independent Variables												$\bar{R}^2$	LOS	DF
		X_2^2	X_3^2	X_4	X_5	X_6	X_7	X_8	X_8^2	X_9	X_{10}	X_{11}	X_{12}			
B	4.495798	-.005689	.013921	-.009737	.0005 79669	.026379	-.389464	.063528	-.002463	-.017568	.032344	.018595	.008590	.744 30	**	12-15
SEB	4.007768	.016306	.044317	.001342	.0002 0317	.029871	.282501	.073929	.002574	.014969	.028847	.002776	.006590			
LOS				**	**							**				

Notes:
1. B = The regression coefficient
2. SEB = The standard error of regression coefficient
3. LOS = The level of significance
4. DF = Degrees of freedom
5. ** = Significant relationship at 99% level of confidence
6. We depend on a sample to build up this equation so we used $\bar{R}^2$ and not R^2.

only three variables statistically significant by 99%, and all the other variables are not significant either by 95% or 99%.

The significant variables are entered into the computer to build up another equation. These variables are (1) the output per manual worker (X_4), (2) the average wages and salaries (X_5), and (3) the quantity of waste per head of population (X_{11}). These variables are entered into the equation according to the following steps: X_4, X_5 and X_{11}.

From the computer output we can build up a statistical model as shown in the following table.

Table 6.11 The Statistical Model in Waste Collection in Non-Metropolitan Districts - England (includes the significant variables).

	Constant	Independent Variables			$\bar{R}^2$	LOS	DF
		X_4	X_5	X_{11}			
B	2.925971	-.008 154	.0005 90026	.017 093	.707 27	**	(3-30)
SEB	1.358306	.000 99282	.0001 6353	.002 100			
LOS	*	**	**	**			

Notes:
1. B = The regression coefficient
2. SEB = The standard error of regression coefficient
3. LOS = The level of significance
4. DF = Degrees of freedom
5. ** = Significant relationship at 99% level of confidence
6. We depend on a sample to build up this equation, so we used $\bar{R}^2$ and not R^2.

It is shown in Table 6.11 that this equation with (3-30) degrees of freedom, is highly significant by 99% as well as all the variables which are included in this equation. We notice also from this table that $\bar{R}^2$ is .70727, which means that this equation explains nearly 71% of the variation of costs per person served in terms of only three variables.

Although $\bar{R}^2$ of this equation is a bit less than $\bar{R}^2$ of the previous one, it is recommended to be used for anticipating the costs per person served in Non-Metropolitan Districts - England, because of two reasons. These are (1) the number of variables in this equation are much less than the number in the previous one, and (2) all the variables in this equation are highly significant by 99% while most of the variables in the previous equation are not significant either by 95% or 99%.

6.6.4 The Actual Models in Waste Collection in Non-Metropolitan Districts - Wales in 1983-84: To test our hypothesis in this area, the correlation coefficients between costs per person served and all the independent variables are measured and shown in Table 6.12 and Figure 6.4.

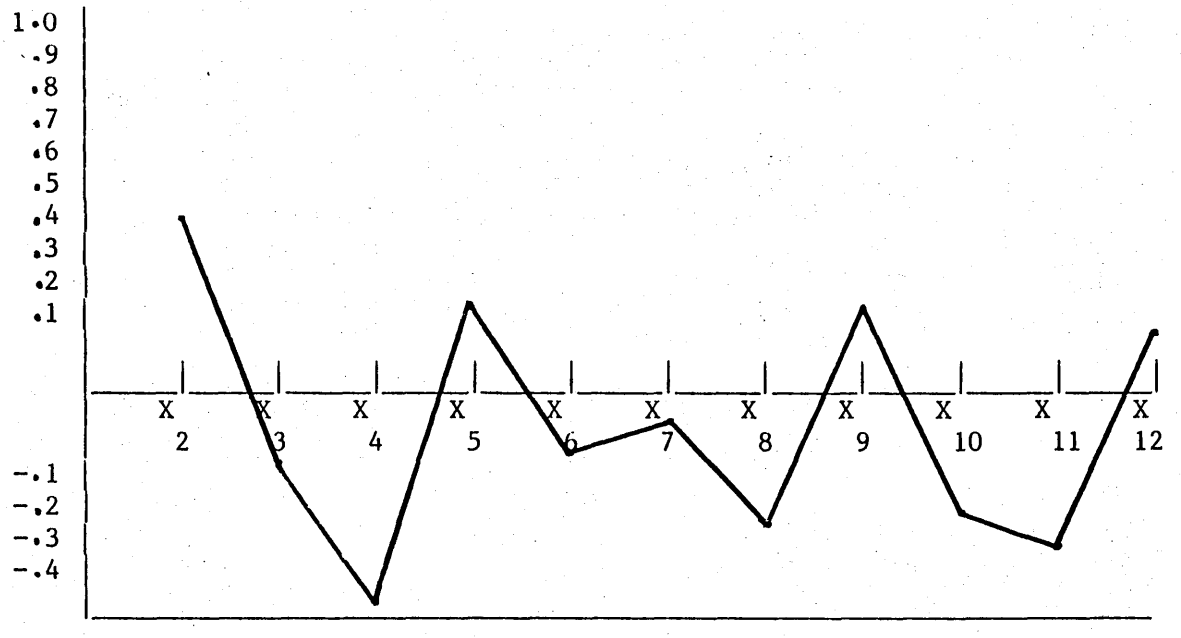
It is shown in Table 6.12 and Figure 6.4 that all the independent variables are correlated with costs pere person served, but the strength and direction of this relationship varies between these variables. For instance the correlations with some of these variables are trivial, such as the frequency of collection (X_3), the average distance to disposal unit (X_6) and the crew size (X_7), whose correlations are -.07344, -.00980 and -.00266 respectively, while the highest correlations are .41697 and -.46215 with the methods of

Table 6.12 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in Waste Collection in Non-Metropolitan Districts - Wales in 1983-84.

	r	LOS
The methods of collection (X_2)	.41697	**
The frequency of collection (X_3)	-.07344	
The output per manual worker (X_4)	-.46215	**
The average wages and salaries (X_5)	.15149	
The average distance to disposal unit (X_6)	-.00980	
The crew size (X_7)	-.00266	
The density of population (X_8)	-.21818	
The use of specialist vehicles with compaction (X_9)	.18679	
The rate of commercial waste (X_{10})	-.18156	
The quantity of waste per head of population (X_{11})	-.29321	*
The use of disposable sacks (X_{12})	.13049	

Notes:
1. r = The correlation coefficient
2. LOS = The level of significance
3. ** = Significant relationship at 99% level of confidence
4. * = Significant relationship at 95% level of confidence

Figure 6 4 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in Waste Collection in Non-Metropolitan Districts - Wales in 1983-84.



Notes: X_2 = the methods of collection

X_3 = the frequency of collection

X_4 = the output per manual worker

X_5 = the average wages and salaries

X_6 = the average distance to disposal unit

X_7 = the crew size

X_8 = the density of population

X_9 = the use of specialist vehicles with compaction

X_{10} = the rate of commercial waste

X_{11} = the quantity of waste per head of population

X_{12} = the use of disposable sacks.

C.C.= the correlation coefficients

collection (X_2) and the output per manual worker (X_4).

It is shown also that there are seven variables which are negatively correlated with costs per person served, while the other four are positively correlated with costs per person served. In addition, we notice from this table that there are only three variables statistically significant by 95% or by 99% while the others are not.

To test our hypothesis we will start with the variables which might have positive or negative relationships with costs per person served. These variables are (1) the crew size (X_7), (2) the density of population (X_8), and (3) the use of disposable sacks (X_{12}).

By looking at Table 6.12 and Figure 6.4 we found that the first two variables are negatively related to costs per person served, while the latter is positively related. The negative relationship with the crew size and with the density of population means that their increase is accompanied by an increase in their productivity with higher rates than the increase in their costs.

The positive relationship with the use of disposable sacks means that the expansion of using these sacks means more costs with higher rates than the improvement in productivity due to the use of these types of sacks in collecting waste.

By looking at the other variables we found that there are many variables whose relationships with costs per person served are different from our hypothesis. These variables are (1) the frequency of collection (X_3), (2) the average distance to disposal unit (X_6), (3) the use of specialist vehicles with compaction (X_9), (4) the rate of commercial waste (X_{10}), and (5) the quantity of waste per head of

population (X_{11}).

It is hypothesised that the relationship with the frequency of collection has to be a positive relationship, but it is found that this relationship is a trivial negative relationship. This unexpected relationship might be due to the following reasons. These are (1) the values of this variable are measured indirectly, and that might affect the accuracy of the relationship between this variable and costs per person served, (2) the values of this variable in the districts in this area are nearly equal because most of them are applying the system of once a week with 100% as shown in the data in Appendix B. This might have an impact on the accuracy of the relationship between this variable and costs per person served, and (3) the relationship between this variable and costs per person served might be affected by the impact of the other variables.

It is hypothesised that the relationship with the average distance to disposal unit has to be positive but is is found that this relationship is a very trivial negative relationship. This unexpected relationship might have occurred as mentioned before, because of the impact of using the data of different year (1982-83) or because the other variables might affect this relationship.

It was found that the relationship with the use of specialist vehicles with compaction is positive, although it is hypothesised to be negative. This unexpected relationship might have happened due to the following two reasons. These are (1) the total waste in each district in this area is low compared with the other areas. This means that this area does not utilize the benefits of using more technologised vehicles, at the same time using these vehicles might mean more capital

costs than the other vehicles. So using these types of vehicles might be more costly than the other type, and (2) this variable might be affected by the influence of the other variables in costs per person served,

One of the most surprising results in this area is the relationship with the rate of commercial waste. It is hypothesised that this relationship has to be positive but it was found that it was negative. This unexpected relationship might have happened because of the following two reasons. Firstly, the commercial waste in this area might need to be collected less frequently or it does not need special kinds of vehicles. or it might be collected each time on a large scale and utilized from the economy of scale. Secondly, this variable might be affected by the impact of the other variables.

The other variable whose relationship with costs per person served is astonishingly different from our hypothesis, is the quantity of waste per head of population. It was expected that this relationship has to be positive, but it was found that it was negative. The only explanation for this unexpected relationship is that the other variables might have a great impact on this variable.

All of these variables together with the squared variables are entered into the computer to build up a statistical model, to find how much these variables are satisfactory to explain the variation of the dependent variable. It is shown in the computer output that only one variable is not included in the equation. This variable is the methods of collection (X).

The other variables are entered into the equation according to the following steps: X_2, X_2, X_2, X_2, X_2, X_2, X_2, X_2, X_2, X_2, X_2 and X_3. All the data about the equation is mentioned in the computer output. Therefore we can build an equation in this area which contains 33 districts. This equation is shown in Table 6.13.

It is shown in this table that R^2 of this equation is .43634. This means that this equation explains nearly 44% of variation in costs per person served, while nearly 56% is not explained. Therefore we can say that our independent variables are not satisfactory in Non-Metropolitan Districts - Wales, because their equation does not explain the majority of the variation of the dependent variable.

It is also found in Table 6.13 that the equation is not significant by 95% or by 99% and at the same time all the variables are not significant. This insignificancy might be because our variables in this area are suffering from the problem of multicollinearity. To solve this problem we used, as mentioned before, the Stepwise command in the computer to build up a new equation. This equation is shown in Table 6.14.

In this table it is shown that this equation by (1-27) degrees of freedom is highly significant by 99%, and its variable is highly significant by 99% also. But it is found that R^2 of this equation is .22954. This means that this equation explains nearly 23% of the variation of costs per person served, while 77% of this variation is not explained. Despite the significancy of this equation and its variables, it is not recommended to be used for anticipating costs per person served in this area because of its low level of R^2.

Table 6.13 The Statistical Model in Waste Collection in Non-Metropolitan Districts - Wales (includes all the variables).

	Constant	Independent Variables													R^2	LOS	DF
		X_2	X_3	X_3^2	X_4	X_5	X_6	X_7	X_8	X_8^2	X_9	X_{10}	X_{11}	X_{12}			
B	29.998 609	.024 173	7.886 741	-1.09 1757	-.0008 29814	.0004 33263	-.096 830	-.387 813	-.274 398	.008 616	-.020 117	.028 689	-.002 831	-.016 476	.436 34		(13-15)
SEB	333.06 1406	.023 510	69.85 3511	3.895 778	.0012 45	.0003 8801	.0909 84	.719 143	.379 805	.0155 89	.053 284	.039 412	.006 248	.015 671			
LOS																	

Notes:
1. B = The regression coefficient
2. SEB = The standard error of regression coefficient
3. LOS = The level of significance
4. DF = Degrees of freedom

Table 6.14 The Statistical Model in Waste Collection in Non-Metropolitan Districts - Wales (by using Stepwise Command).

	Constant	Independent Variables	R^2	LOS	DF
		X 4			
B	10.469945	-.001180	.22954	**	(1-27)
SEB	.555554	.00041615			
LOS	**	**			

Notes:
1. B = The regression coefficient
2. SEB = The standard error of regression coefficient
3. LOS = The level of significance
4. DF = Degrees of freedom
5. ** = Significant relationship at 99% level of confidence

From the previous discussion it is shown that neither this equation nor the previous one could be used for anticipating costs per person served in Non-Metropolitan Districts - Wales, because of the insignificancy of the equation and its variables or because of the low level of R^2.

The main reason for this is expected to be one of the following two reasons. Firstly: the independent variables in this area might be unsatisfactory to explain the costs per person served, especially because the relationships with many of these variables are different from our hypothesis. Secondly: the independent variables in this area might be suffering from the problem of multicollinearity, as mentioned before.

It was mentioned before that Waste Collection activity is mostly related to the number of population and the level of urbanization. Therefore it is expected that the unsatisfactory of our independent variables in Non-Metropolitan Districts - Wales, is because of the low number of population in this area compared with the other areas, and because this area is the most rural area in England and Wales.

6.7 Summary and Conclusion

At the beginning of this chapter we chose our indpendent variables and we put up the hypothesised relationship between these variables and the costs per person served. Some of these variables are excluded from our study because of the unavailability of their data or because of the absence of reliable data, or because of the expected insignificancy of the relationships with this variable in England and Wales.

The remaining variables which we studied in this chapter are: (1) the methods of collection (X_2), (2) the frequency of collection (X_3), (3) the output per manual worker (X_4), (4) the average wages and salaries (X_5), (5) the average distance to disposal unit (X_6), (6) the crew size (X_7), (7) the density of population (X_8), (8) the use of specialist vehicles with compaction (X_9), (9) the rate of commercial waste (X_{10}), (10) the quantity of waste per head of population (X_{11}), and (11) the use of disposable sacks (X_{12}).

These variables with the dependent variable are measured in each area in England and Wales. Most of them are measured directly, while two of them are measured indirectly. These two are (1) the methods of collection, and (2) the frequency of collection.

All of these variables in each area are entered into the computer with a command to measure the correlation coefficient between each of the independent variables and the costs per persons served. The results in London Boroughs, Metropolitan Districts, Non-Metropolitan Districts - England, and Non-Metropolitan Districts - Wales are shown in Tables 6.3, 6.6, 6.9 and 6.12 respectively.

The actual correlation coefficients in each area are compared with our hypothesis. In this comparison we started with the variables which are expected to have negative or positive relationships with costs per person served. The actual relationships with these variables which are (1) the crew size (X_7), (2) the density of population (X_8), and (3) the use of disposable sacks (X_{12}), are shown in Table 6.15.

Table 6.15 The Actual Relationships With Crew Size, Density of Population and the Use of Disposable Sacks in the Four Areas in England and Wales in 1983-84.

	London Boroughs	Metropol-itan Districts	Non-Met. Districts England	Non-Met. Districts Wales
The crew size (X_7)	Negative	Negative	Positive	Negative
The density of population (X_8)	Negative	Positive	Positive	Negative
The use of disposable sacks (X_{12})	Positive	Negative	Negative	Positive

Note: The data in this table was collected from Tables 6.3, 6.6, 6.9 and 6.12.

In this table it is shown that the relationships with the density of population and the use of disposable sacks are 50% positive and 50% negative while the relationships with the crew size is 75% negative and 25% positive.

By comparing the actual results of the other variables with our hypothesis, it was found that some of these relationships are as hypothesised and some others are different from our hypothesis. It was found that there is only one unexpected relationship in Metropolitan Districts and Non-Metropolitan Districts - England, while there are three unexpected relationships in London Boroughs and five in Non-Metropolitan Districts - Wales.

The most important results from this comparison are as follows: Firstly: the unexpected relationship with the average distance to disposal unit (X_6). It is hypothesised that this relationship has to be positive, but it is found that this relationship is surprisingly negative in the four areas. Secondly: the big number of variables whose relationships with costs per person served, vary from our hypothesis in Non-Metropolitan Districts - Wales, and one of these variables is the quantity of waste per head of population.

To know how satisfactory these variables are to explain the costs per person served, they are all entered into the computer to build up a statistical model. Three squared variables are added because it is expected that this relationship has to be curvilinear relationship and not linear. R^2 and $\bar{R}^2$ are used as criteria in this case. The higher R or $\bar{R}^2$ the more satisfactory the equation is.

According to these criteria it is found that the equations are satisfactory in London Boroughs, Metropolitan Districts and Non-Metroplitan Districts - England, while it is not satisfactory in Non-Metropolitan Districts - Wales. Furthermore, it is found that the equations in the first three areas are highly significant by 99% and some of their variables are statistically significant by 95% or by 99%, while the equation in Non-Metropolitan Districts - Wales is not significant and all of its variables are also not significant.

Other equations are built in London Boroughs, Metropolitan Districts and Non-Metropolitan Districts - England, by using only the variables which are statistically significant by 95% or 99%. The new equations are recommended to be used for anticipating costs per person served in these areas despite their lower level of R^2 or $\bar{R}^2$ than the previous equations, because they include fewer variables.

It was found that three variables were always included in these three equations. These were (1) the output per manual worker (X_4), (2) the average wages and salaries (X_5), and (3) the quantity of waste per head of population (X_{11}). So it was expected that these three variables were the most important ones which affected costs per person served in these three areas.

Another equation is built also in Non-Metropolitan Districts - Wales by using Stepwise Command, to solve the problem of multicollinearity. It was found that R^2 in this equation was also very low. Therefore we cannot use either this equation or the previous one for anticipating costs per person served in this area.

From the previous discussion it was found that our independent variables are satisfactory in London Boroughs, Metropolitan Districts, and Non-Metropolitan Districts - England, while they are not satisfactory in Non-Metroplitan Districts - Wales. It was mentioned earlier that waste collection is related by population and urbanization, so it was expected that the dissatisfactions of these variables in Non-Metropolitan Districts - Wales is expected to be because (1) the number of population in each district in this area is less than that number in the other areas, and (2) this area is the most rural in England and Wales.

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CHAPTER VII

SUMMARY AND CONCLUSIONS

7.1 Summary

The growth of productivity in local government in England and Wales means different things for different people. It is an important factor for central government, taxpayers, consumers, voters, councillors, workers and unions of local government workers. Each one of these groups is looking at the growth of productivity from his viewpoint.

Central government is looking at this growth because it means the reduction of its financial support to local government activities. The taxpayers are looking at the growth because it means the reduction in their payments of taxes and rates, or it means an increase in the services they receive for the same amount of payment, or it could mean both.

The consumers are looking at the growth of productivity because it means an increase in the services they receive. The voters consist of taxpayers and consumers so they are looking at the growth of productivity because it could mean for them an increase in services they receive by keeping or reducing the level of payments as rates and taxes.

The councillors are looking at the growth in productivity in local government for various reasons. These reasons are: (1) to face the problem of any reduction in central government financial support and to supply the services they want to supply, (2) to achieve the contradiction goals for consumers and taxpayers, and (3) to achieve some financial rewards for themselves beside their self satisfaction.

The local government workers are looking at the growth in productivity, because it means for them an increase in their wages and salaries especially because productivity has been linked with wages and salaries

in local government activities since the mid sixties.

But this growth in productivity has its disadvantages from their viewpoint because it might mean the reduction in the number of people who are working in this area which means an increase in the number of unemployed people.

The unions of local government workers are looking at the growth of productivity because it helps them in their negotiations with the government to raise workers' wages and salaries.

The growth of productivity in local government activities, as in other activities, depends to a great extent on the ability to measure its productivity to find out how much productivity has increased or decreased. After making some studies to investigate this increase or decrease in productivity, we can choose the policies which could improve productivity in the future.

Productivity is always measured in relative figures (ratios), and not in absolute figures. It is measured by dividing the output by one or more of the inputs which are required; to achieve that output. The choosing of one or more of the inputs depends on the purpose of measuring productivity. The commonest purpose in this case is to measure the employees' performance (labours' productivity), so the output has to be divided by one of labours' aspects which are the numbers of workers, man hours, and wages and salaries. The choosing of one or more of these aspects depends on which term is chosen to measure the labours' productivity.

Labour productivity could be measured either in physical terms or in financial terms. But the use of physical terms suffers from many

problems. These are (1) it is very difficult to be applied in companies which produce more than one kind of product because we can not add oranges to apples, (2) because of the change in product quality from one year to another - we cannot compare the productivity in the same company between different years, (3) we can not, also, compare the productivity between different companies, because it is very difficult to find two companies which produce the same product with the same quality, and (4) the use of the number of workers or man hours as a denominator for productivity equation, does not take into account the workers' skills and the change in these skills from one year to another.

Accordingly, the use of financial terms is recommended to measure labour productivity, by using the following equation:

Labour productivity = added value/total wages and salaries where: Added value = sales value of production - costs of materials and services used

Each of these equation variables suffers from the change of the monetary values as the result of inflation, so they have to be deflated by using one or more of the price indices.

In this case the general price indices are recommended to be used rather than the specific price indices, because the former indices reflect only the reduction of monetary values as the result of inflation, while the latter indices reflect the change in price level not only as the result of inflation but also as the result of technological improvement, the change in consumers' taste, etc.

It is shown in the previous equation that measurement of labour productivity depends mainly on the measurement of the sales value of production. It is found that output of local government activities in England and Wales are not for sale - they are always supplied to people either free of charge or with a very low charge compared with its costs, to enable any person who needs any service to receive it.

These services are financed mainly by taxes and rates, and there is no relationship between the level of payments and the level of these services. Accordingly, we cannot depend either on the sales value or on the values of taxes and rates in measuring the output of local government activities in England and Wales.

Local government in England and Wales is a part of the public sector, so that local government suffers from public sector problems. These problems are: (1) the lack of competition, (2) the lack of goals, (3) the lack of control, (4) the lack of measurement, (5) bureaucracy, (6) corruption, (7) they are affected by political matters, etc. As a result of these problems local government costs are expected to be uneconomic, so we can not depend on costs to measure the output of local government activities.

Therefore, we have to use physical terms despite their problems in measuring local government productivity. Productivity in physical terms is measured by dividing the output by the input which are measured physically. The input of local government activities are easily measured physically, while it is very difficult to measure the output of these activities in physical terms.

The main reason for this difficulty in measuring the output of local government activities is the absence of one measurement which gives enough information for the quantity and the quality of doing any local government activity, so we have to use many measurements in this case to give enough information which is needed.

For instance the output of education service could be measured by pupil-days and by the number of pupils. But we have to use some additional measurements to give enough information about the quality and the usefulness of the education system. These additional measurements are: (1) the number of hours spent in the class, (2) teacher-pupil rations, (3) the examination successes and the standard of these successes, and so on.

The use of many physical measurements for the output and the productivity for local government activities does not give enough indication of productivity and the growth in productivity for the people who are interested in this area. So, it is recommended to use some additional measurements in addition to the physical terms to get the information which we need. These measurements are: (1) costs per unit which gives indications for productivity and the growth of productivity for central government, taxpayers, consumers, voters and councillors, and (2) wages and salaries and unemployment which give indications in the same case for workers and their unions.

Local government in England and Wales is dealing with many activities. These activities are divided officially into (1) education and libraries etc., (2) health and social services, (3) law, order and protective services, (4) local transport, (5) housing, (6) employment, and (7) local environment services.

Waste collection is one of the local environment services which aims to promote health by providing an environment free from the hazards and unpleasantness of uncollected waste, and to reduce the amount of inconvenience and danger to residents and business in handling and disposing of their waste.

Waste collection was chosen to be studied in this research for many reasons. These are as follows:

1. It has a political visibility from the viewpoint of councillors and consumers which may be more than the visibility of the other local government activities which are more costly than this activity.
2. It has a special political visibility in England and Wales because waste collection is one of the local government activities which is included in the privatisation programme started at the beginning of Mrs. Thather's Government in 1979.
3. This study is seen as an additional study in an area which is suffering from the lack of previous studies.
4. Motivation system has a great impact on productivity and the growth in productivity in this service, because: (a) this service is an intensive-labour activity, (b) the majority of its workers are manual workers, and (c) manual work in this service does not need highly skilled workers.
5. The output of this activity is easily measured compared with other local government activities, and
6. Incentive-bonus schemes have been applied in this service, since the mid sixties, so it is expected that productivity in this service has increased.

Productivity in waste collection in England and Wales is measured physically by dividing the total waste collected (in tonnes) by the total number of manual workers. The manual workers consist of drivers, loaders, drivers/loaders, and other manual workers.

This measurement of productivity does not give a solid indication for productivity and the growth in productivity, because it does not take into account the different qualities in supplying this service. It does not take into account the methods, frequency and the reliability of doing this service.

Furthermore, this measurement does not give enough information for different people who are interested in this area. So it is recommended to use some additional measurements to the previous one, to give us the information which we are looking for.

These additional measurements are: (1) costs per tonne, (2) costs per person served, (3) wages and salaries, and (4) the number of unemployed people. The first two measurements are used to give enough information about productivity and the growth in productivity for central government, taxpayers, consumers, voters and councillors. Whereas the last two measurements are used to give indications for people who are working in this activity and their unions, about the productivity and the growth in productivity in this area.

It is hypothesised that the relationship between the different methods used for measuring productivity in waste collection in England and Wales, to be as follows:

1. The growth in productivity has to be accompanied by a reduction in costs per tonne, and in costs per person served, and
2. The growth in productivity has to be accompanied by an increase in wages and salaries and in the number of unemployed people.

To examine these hypothesis a time series study was done in waste collection in England and Wales during the period 1978-79 until 1983-84. In this study the Retail Price Index is used to deflate each of the financial variables, although it is a specific price index and not a general price index. The main reasons for choosing this Index are (1) it is the commonest index which is used in the U.K., and (2) it includes the average prices for consumer goods and services, which most people are interested in.

The results of this study are shown in Table 7.1 and Figure 7.1. It was found in this table and figure that there was always a positive rate of growth in productivity in waste collection in England and Wales in each year during this period. This growth in productivity was always accompanied by a reduction in costs per tonne and costs per person served, with the exception of one year only, namely 1979-80. In this year the increase in productivity was accompanied by an increase in costs per tonne and costs per person served.

The reason for this unexpected relationship in 1979-80 might be because there was an increase in one or more of waste collection costs (wages and salaries, capital costs, etc.) with a higher rate than the growth in productivity. It is shown in this table too, that the rate of growth in wages and salaries was very high in that year (7.9%) compared with other years where the highest rate was 2.8% in 1980-81.

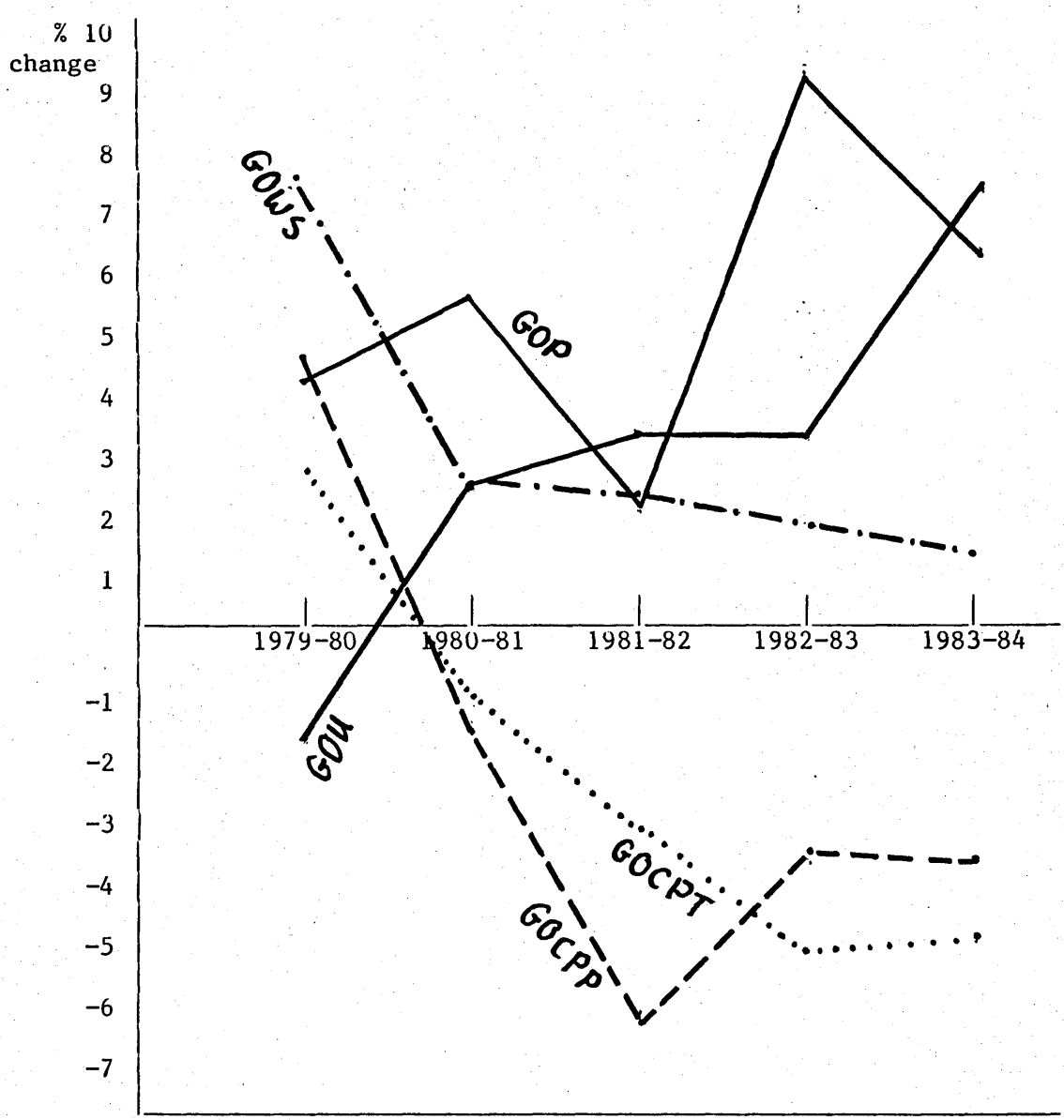
Table 7.1 The Relationship Between the Percentage Growth of Productivity and the Percentage Growth of the Additional Measurements for Productivity in Waste Collection in England and Wales in 1978-79 till 1983-84.

%

	1979-80	1980-81	1981-82	1982-83	1983-84
The percentage growth of productivity	4.4	5.7	2.2	9.2	6.3
The percentage growth of costs per tonne	3.0	-0.9	-3.0	-5.0	-4.8
The percentage growth of costs per person served	4.8	-1.5	-6.3	-3.3	-3.4
The percentage growth of wages and salaries	7.9	2.8	2.5	2.2	1.8
The percentage growth of unemployment	-1.4	2.8	3.5	3.7	7.8

Notes: The figures in this table are collected from Tables 5.6, 5.11, 5.15, 5.20 and 5.23.

Figure 7.1 The Relationship Between Productivity and the Additional Measurements for Productivity in Waste Collection in England and Wales in 1978-79 till 1983-84.



Notes: 1. GOP = The Percentage Growth of Productivity
2. GOCPT = The Percentage Growth of Costs per Tonne
3. GOCPP = The Percentage Growth of Costs per Person Served
4. GOWS = The Percentage Growth of Wages and Salaries
5. GOU = The Percentage Growth of Unemployment

It was also found in Table 7.1 and Figure 7.1 that the growth in productivity was always accompanied by an increase in wages and salaries, and mostly accompanied by an increase in the number of unemployed people with the exception of 1979-80. In this year the growth in productivity was accompanied by a decrease in the number of unemployed people.

This unexpected relationship between productivity and unemployment in 1979-80 might be because (1) the method which is used in measuring the number of unemployed people might not be accurate enough, because it takes into account the people who lost their jobs and others who were looking for jobs and could not get any, and (a) the increase in the output in that year was much higher than in any other year, and this might be responsible for the need for more workers to collect more waste.

In general it is found that there was always a growth in productivity in waste collection in England and Wales in 1978-79 until 1983-84. This growth was nearly always accompanied by a reduction in costs per tonne and in costs per person served, and it was almost always accompanied by an increase in wages and salaries and in the number of unemployed people.

In addition to the previous study, we did a cross section analysis for productivity in waste collection in England and Wales in 1983-84 which is the last year of the data. In this study we found that England and Wales is divided into four areas. These are (1) London Boroughs, (2) Metropolitan Districts, (3) Non-Metropolitan Districts - England, and (4) Non-Metropolitan Districts - Wales. Our study was therefore divided into four parts, one part for each area.

It was also found that the numbers of districts are quite reasonable in London Boroughs (32), Metropolitan Districts (36), and Non-Metropolitan Districts - Wales (33), therefore we did depend on the whole population in these three areas. It was found that the number in Non-Metropolitan Districts - England was 268 districts (39 counties), which is very high compared with other areas. We preferred to depend on a sample in this case. This sample consisted of 39 districts, one district from each county. The main reasons for choosing this number are (1) to give each county an opportunity to be represented in the sample, (2) this number is quite near to the number of districts in other areas, and (3) this number represents about 15% from the total number of districts in this area, and this percentage is expected to be good enough to represent the whole population.

In the first county (Avon) the district was chosen by using scramble numbers from 1 to 6 which represent the number of districts. The No. 3 which was chosen randomly in this county was considered to be a starting point in choosing the sample even from the other counties. Therefore district no. 3 in each county was always chosen in the sample, except in the Isle of Wight, which consists of only 2 districts. So in this case we chose district no. 2.

In this study costs per person served (X_1) was chosen to represent the productivity in waste collecton, because it gives indications for productivity and the growth in productivity for the majority of people who are interested in this area.

The main purposes for this study are (1) to suggest the independent variables which influence the costs per person served, (2) to find out the actual relationship between the independent variables and costs per

person served, (3) to find out how satisfactory the independent variables are to represent costs per person served, and (4) to build up a statistical model to anticipate costs per person served in future.

At the beginning of this study we chose the variables which were expected to have an impact on costs per person served in waste collection activities. Some of these variables are eliminated because of the absence of their data, some others are excluded because their impact on costs per person served is expected to be very limited, and so on. The names of some variables have been changed to represent the methods used to measure them.

The independent variables which were chosen for this study, the methods of measuring them, and the hypohesised relationship between them and costs per person served are shown as follows:

(1) The methods of collection (X_2): the methods of collection which are used in England and Wales are backdoor collect and return, kerbside system, other collect and return, skip system, other normal methods, and special collection. The values of these methods were measured indirectly and it was hypothesised that the relationship between this variable and costs per person served has to be a positive relationship.

(2) The frequency of collection (X_3): the frequency of collection in England and Wales is once a week, or less than once a week, or twice a week. The values of them were measured indirectly, and the hypothesised relationship between this variable and costs per person served has to be a positive relationship.

(3) The output per manual worker (X_4): this variable was measured by dividing the total waste (by tonnes), by the total manual workers

which consist of drivers, loaders, drivers/loaders, and other manual workers. It was hypothesised that the relationship between this variable and costs per person served has to be a negative relationship.

(4) The average wages and salaries (X_5): this variable was measured by dividing the employees' expenditure by the total staff employed. The relationship between this variable and costs per person served was hypothesised to be a positive relationship.

(5) The average distance to disposal unit (X_6): this variable was not available in the data for 1983-84, so it was taken from the data of 1982-83. The relationship between this variable and costs per person served was hypothesised to be a positive relationship.

(6) The crew size (X_7): this variable was measured by dividing the total manual employees by the total number of collection vehicles. The relationship between this variable and costs per person served was hypothesised to be either negative or positive.

(7) The density of population (X_8): this variable was already available in the data, and it was hypothesised that the relationship between this variable and costs per person served might be negative and might be positive also.

(8) The use of specialist vehicles with compaction (X_9): this variable was measured by dividing the number of the specialist vehicles with compaction by the total number of vehicles. It was hypothesised that the relationship between this variable and costs per person served has to be a negative relationship.

(9) The rate of commercial waste (X_{10}): this variable was measured by adding together the percentage of industrial waste to the percentage of commercial waste. The relationship between this variable and costs per person served was hypothesised to be a

positive relationship.

(10) Waste per head of population (X_{11}): this variable was measured by dividing the total weight of waste (by tonnes) by the total number of population. The relationship between this variable and the costs per person served was hypothesised to be a positive relationship.

(11) The use of disposable sacks (X_{12}): this variable was measured by using the percentage of waste collected by disposable sacks, which was already mentioned in the data. It was hypothesised that the relationship between this variable and costs per person served might be negative and might be positive too.

The dependent and independent variables were entered into the computer with a command to measure the Pearson Correlation Coefficients between the independent variables and costs per person served. The actual results in each area in England and Wales are shown in Table 7.2 and Figure 7.2.

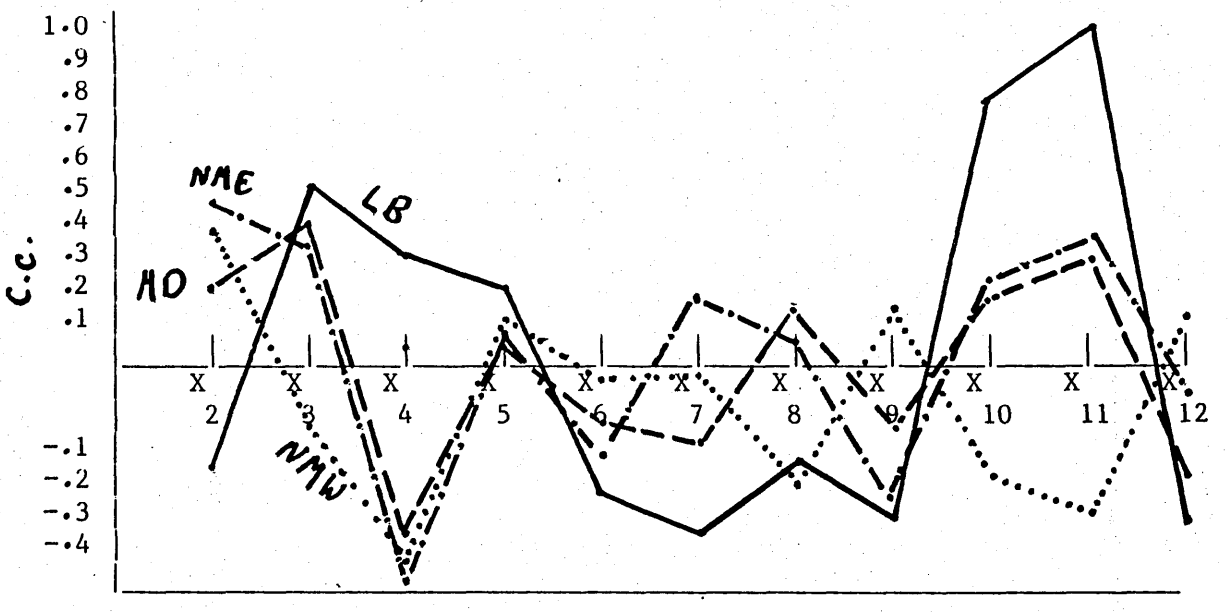
It is shown in this table and figure that all the independent variables are related to costs per person served, but the strength and direction of these relationships very from one variable to another and from one area to another. For instance, it is found that the highest correlation coefficient is with the quantity of waste per head of population (X_{11}) in London Boroughs which is .99882, while the lowest correlation coefficient is with the crew size (X_{7}) in Non-Metropolitan Districts - Wales which is -.00266.

Table 7.2 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in the Four Areas in England and Wales in 1983-84.

	London Boroughs	Metropolitan Districts	Non-Met. Districts England	Non-Met. Districts Wales
X 2	-.17575	.24530	.49965 **	.41697 **
X 3	.50089 **	.41561 **	.38170 **	-.07344
X 4	.30981 *	-.36777 **	-.49332 **	-.46215 **
X 5	.22625	.04590	.06289	.15149
X 6	-.21698	-.02637	-.10837	-.00980
X 7	-.37242 **	-.09666	.19340	-.00266
X 8	-.16300	.15744	.06352	-.21818
X 9	-.34473 *	-.05108	-.19261	.18679
X 10	.78353 **	.20604	.25646 *	-.18156
X 11	.99882 **	.33862 **	.33630 **	-.29321 *
X 12	.28627	-.14654	-.02111	.13049

Notes:
1. The figures in this table are collected from Tables 6.3, 6.6, 6.9 and 6.12.
2. ** = Significant relationship at 99% level of confidence
3. * = Significant relationship at 95% level of confidence

Figure 7·2 The Correlation Coefficients Between Costs per Person Served and the Independent Variables in the Four Areas in England and Wales in 1983-84.



Notes

1. LB = London Boroughs, MD = Metropolitan Districts, NME = Non-Metropolitan Districts - England, and NMW = Non-Metropolitan Districts - Wales.
2. X_2 = the methods of collection, X_3 = the frequency of collection, X_4 = the output per manual worker, X_5 = the average wages and salaries, X6 = the average distance to disposal unit, X_7 = the crew size, X_8 = the density of population, X_9 = the use of specialist vehicles with compaction, X_{10} = the rate of commercial waste, X_{11} = the quantity of waste per head of population, and X_{12} = the use of disposable sacks.
3. C.C.= the correlation coefficients

It is shown also in this table and figure that these variables are highly correlated with costs per person served in London Boroughs, followed by Non-Metropolitan Districts - England, Metropolitan Districts, and Non-Metropolitan Districts - Wales, respectively. Furthermore it is found that some of these relationships are statistically significant by 95% or 99% while the others are not.

To test our hypothesis the actual results which are mentioned in Table 7.2 and Figure 7.2 compared with our hypothesis which were mentioned earlier, we started with the variables which were hypothesised to have either negative or positive relationships with costs per person served. These variables are (1) the crew size (X_7), (2) the density of population (X_8), and (3) the use of disposable sacks (X_{12}).

It is found in this table and figure that the relationship with the density of population and the use of disposable sacks are negative in two areas and positive in the other two areas. This means that the relationships with these two variables were 50% negative and 50% positive.

It is found also in this table and figure that the relationship with the crew size is negative in three areas and positive in only one. This means that the relationship with this variable is 75% negative and 25% positive.

Furthermore it was found that the actual relationships with some of the other variables vary from our hypothesis. These are as follows:

Firstly: It is hypothesised that the relationship between the average distance to disposal unit and costs per person served has to be a positive relationship, but it was found that this

relationship is surprisingly negative in all of the four areas.

This unexpected relationship might have occurred because (1) the figures in this variable were taken from the Statistics of 1982-83 which might have changed in 1983-84, and this may have caused the inaccuracy in its relationship with costs per person served. and (2) the relationship with this variable might be affected by the impact of the other independent variables on costs per person served.

Secondly: It was found that the relationship between costs per person served and the output per manual worker was positive in London Boroughs, while it was hypothesised to be negative.

This unexpected relationship might have occurred because (1) the growth in productivity in this area may have been accompanied by an increase in wages and salaries with a higher rate than the growth in productivity, and (2) this relationship might be affected by the impact of the other independent variables.

Thirdly: It was hypothesised that the relationship between costs per person served and the methods of collection has to be positive but it was found that this relationship was negative in London Boroughs. This unexpected relationship might have happened because (1) this variable was measured indirectly and this might have affected this relationship, and (2) the relationship might be affected by the impact of the other independent variables.

Fourthly: It was hypothesised that the relationship between costs per person served and the frequency of collection has to be a positive relationship, but it was found that this relationship is

surprisingly negative in Non-Metropolitan Districts - Wales.

This unexpected relationship might have happened because (1) this variable was measured indirectly and that might affect the accuracy of this relationship, and (2) the other variables might have an impact on this relationship.

Fifthly: It was hypothesised that the relationship between costs per person served and the use of specialist vehicles with compaction has to be a negative relationship, but it was found that this relationship is astonishingly positive in Non-Metropolitan Districts - Wales.

This unexpected relationship might have occurred because (1) the low quantity of waste in each district in this area compared with the other areas might mean that this area did not utilise the large capacity of these vehicles, at the same time these vehicles might cause some additional capital costs, and (2) this relationship might be affected by the impact of the other independent variables.

Sixthly: It was hypothesised that the relationship between costs per person served and the rate of commercial waste has to be a positive relationship, but it was found that this relationship was negative in Non-Metropolitan Districts - Wales.

This unexpected relationship might have happened because (1) the commercial waste in this area might be utilised from the economy of scale, and at the same time does not need either more frequency of collection or special vehicles for collection, and (2) this relationship might be affected by the impact of the other

independent variables.

Seventhly: It was hypothesised that the relationship between costs per person served and the quantity of waste per head of population has to be positive, but it was found that this relationship was negative in Non-Metropolitan Districts - Wales.

This unexpected relationship is the most surprising one because there is no explanation how it could be negative except that this relationship might be affected by the impact of the other independent variables.

To know how satisfactory these variables are to explain the costs per person served, all of them in addition to X_2^2, X_3^2, and X_8^2 were entered into the computer to build up a statistical model in each area in England and Wales. The main reason for adding these squared variables is that this relationship is expected to be curvilinear and not linear.

The equations which were built into the computer are shown in Table 7.3. It is shown in this table that R^2 and $\bar{R}^2$ are .99992, .80331 and .74430 in London Boroughs, Metropolitan Districts and Non-Metropolitan Districts - England, respectively. It is also shown in this table that the equations in these three areas are highly significant by 99% and some of their variables are statistically significant either by 95% or 99%. Therefore the independent variables which were chosen in this case are highly satisfactory to explain costs per person served in these areas.

To build up statistical models to anticipate costs per person served in these three areas, we preferred to depend on the variables which are statistically significant by 95% and 99%. The new equations are shown

in Table 7.4. From this table it is shown that R^2 and $\bar{R}^2$ of these equations are less than the previous equations which are shown in Table 7.3.

Despite the lower levels of R^2 and $\bar{R}^2$ in the new equations, they are recommended to be used to anticipate costs per person served in these three areas because of three reasons, (1) the numbers of the variables in the new equations are much less than these numbers in the previous equations, (2) their R^2 or $\bar{R}^2$ are satisfactory to explain costs per person served, and (3) these equations are highly significant by 99% and all of their variables are statistically significant either by 95% or 99%.

It is also shown in Table 7.4 that three variables are always included in these equations. These variables are (1) the output per manual worker (X_4), (2) the average wages and salaries (X_5), and (3) the quantity of waste per head of population (X_{11}). So it is expected that these three variables are the most important factors which affect costs per person served in London Boroughs, Metropolitan Districts, and Non-Metropolitan Districts - England.

On looking at Table 7.3 it is found that R^2 in Non-Metropolitan Districts - Wales equation is very low (.43634), and it is also found that this equation and all of its variables are not statistically significant either by 95% or by 99%. This might have occurred either because our variables are not satisfactory in this area, or because our variables are suffering from the problem of mulicollinearity in this area.

Table 7.3 The Statistical Models in the Four Areas in England and Wales

(includes all the variables).

	Constant	Independent Variables													R^2	LOS
		X_2	X_2^2	X_3	X_3^2	X_4	X_5	X_6	X_7	X_8	X_8^2	X_9	X_{10}	X_{11}	X_{12}	
London Boroughs	.402310	-	-.0006 79695	-	.001 806	-.014 258**	.0003 89597*	.1124 97*	-.194 380	.0870 82*	-.0004 00820	-.002 299	-.009 767	.0339 71**	.008 663	.999 92	**
Metroplitan Districts	-19.797 441	1.824 759	-	-	.0867 43*	-.010 271*	.00064 2679*	-.031 582	.618 055	-.170 701	.003 391	-.013 135	.057 149	.0119 47*	.013 396	.803 31	**
Non-Metropolitan Districts - England	4.495 798	-	-.005 689	-	.013 921	-.009 737**	.00057 9669**	.026 379	-.389 464	.063 528	-.002 463	-.017 568	.032 344	.018 595**	.008 590	.744 30	**
Non-Metropolitan Districts - Wales	29.99 8609	.0241 73	-	7.886 741	-1.09 1757	-.0008 29814	.0004 33263	-.096 830	-.387 813	-.274 398	.008 616	-.020 117	.028 689	-.002 831	-.016 475	.436 34	

Notes: 1. LOS = The level of significance
2. ** = Significant relationship at 99% level of confidence
3. * = Significant relationship at 95% level of confidence
4. Adjusted R^2 is used in Non-Metropolitan Districts - England because we depend in this case on a sample and not on all of the population.

Table 7.4 The Statistical Models in the Four Areas in England and Wales (by using the significant variables or Stepwise command).

	Constant	Independent Variables					R^2	LOS
		X_3^2	X_4	X_5	X_8	X_{11}		
London Boroughs	.823446	-	-.018434 **	.000682466 **	.047465 **	.034022 **	.99966	**
Metropolitan Districts	-2.292044	.069237**	-.008892 **	.000599634*	-	.015795**	.62843	**
Non-Metropolitan Districts - England	2.925971*	-	-.0088154**	.000590026**	-	.017093**	.70727	**
Non-Metropolitan Districts - Wales	10.469945**	-	-.001180 **	-	-	-	.22954	**

Notes:
1. LOS = The level of significance
2. ** = Significant relationship at 99% level of confidence
3. * = Significant relationship at 95% level of confidence
4. R^{-2} is used in Non-Metropolitan Districts - England because we depend in this case on a sample and not on all of the population.
5. When we tried to build an equation in London Boroughs with the significant variables, it is found that X_6 is not significant. So we built another equation with the remaining variables which are X_4, X_5, X_8 and X_{11}.

To solve the problem of multicollinearity in Non-Metropolitan Districts - Wales, we built up another equation by using Stepwise Command. the new equation is shown in Table 7.4. It is shown in this table that although the equation and its variables are highly significant by 99%, it is found that its R^2 (.22954) is very low. Therefore, either this equation or the previous one is not recommended for use in anticipating costs per person served in Non-Metropolitan Districts - Wales.

From the previous discussion it was found that our independent variables are highly satisfactory to explain costs per person served in London Boroughs, Metropolitan Districts, and Non-Metropolitan Districts - England, while they are not satisfactory in Non-Metropolitan Districts - Wales. Waste collection activities is highly related to population and urbanization, therefore it is expected that the dissatisfactions of our variables in Non-Metropolitan Districts - Wales is expected to be because of (1) the number of population in each district in this area is less than that number in the other areas, and (2) this area is the most rural area in England and Wales.

Therefore it is recommended in general to use the statistical models which were built by using the significant variables to anticipate costs per person served in London Boroughs, Metropolitan Districts, and Non-Metropolitan Districts - England, while it is not recommended to be used for the same purpose in Non-Metropolitan Districts - Wales. Accordingly it is recommended for other researchers to make new studies in waste collection in Non-Metropolitan Districts - Wales by using different variables in addition to all or some of our variables.

7.2 Conclusions

In Tables 7.3 and 7.4 the statistical models are shown which were built to anticipate costs per person served in the four areas in England and Wales. These areas are London Boroughs, Metropolitan Districts, Non-Metropolitan Districts - England and Non-Metropolitan Districts - Wales. In Table 7.3 we built up the statistical models which include all our independent variables, while in Table 7.4 we built up the statistical models which include only the significant variables.

It is found from these two tables that our independent variables did not work out in Non-Metropolitan Districts - Wales (the R^2 of its model is very low, and this model is not statistically significant either by 95% or by 99%). Therefore, we will depend in this part on the statistical models of the other three areas.

From the statistical models of London Boroughs, Metropolitan Districts, and Non-Metropolitan Districts - England, we can divide our independent variables into three groups. The first group contains the variables which are statistically significant in all three areas. The second group contains the variables which are statistically significant in only one of these areas. The third group contains the variables which are not statistically significant at all.

It is shown in Table 7.4 that the first group contains three variables. These variables are: (1) the output per manual worker (X_4), (2) the average wages and salaries (X_5), and (3) the quantity of waste per head of population (X_{11}). These variables are expected to be the most important variables which affect the costs per person served (X_1), in

waste collection in England and Wales, because they are included in the three statistical models (which contain the significant variables) in the three areas, and the majority of them are statistically significant by 99%.

From these variables we notice that there is only one variable which is completely beyond the control of the waste collection managers. This variable is the quantity of waste per head of population. This variable depends completely upon the level and pattern of consumption of the customers which depends on the income level, the nature of the district, etc.

We notice also that there is another relevant variable. Part of it is out of the control of waste collection managers and the other part is affected by the manager's policies. This variable is the average wages and salaries. In the U.K. the greater part of this variable is determined nationally and the other part is determined by the managers by applying incentive bonus schemes. In this case Fowler points out that:

> "although the main structure and level of local government pay systems are determined nationally, there is considerable scope for local initiative in the effective local application of these systems and in the development of efficiency or productivity schemes."(1)

The only variable which is completely under the waste collection manager's control in the U.K. is the output per manual worker (productivity). This variable is therefore the most important variable which could be used to reduce costs per person served. The higher the productivity is, the lower the costs per person served.

Productivity and the growth of productivity in any activity depends on the ability (skills) of its workers and on the motivation system. But, we do not think that the manual workers in waste collection in England and Wales who are drivers, loaders, drivers/loaders, and other manual workers, do need a high level of natural skill. Therefore, it is expected that the motivation system has the greater effect on the productivity in this activity (the output per manual worker).

The "motivation system" could be defined as any factor or factors that encourage workers and employees to work efficiently, in accordance to the objectives of the organization. It could be defined, also, as it is a psychological energy directed towards goals. There are many procedures to motivate people to work hard, and that depends on the need of each person. In this case Bourn points out that:

> "Some people, of course, are concerned to earn the very highest wages and salaries that they can. Others seem more interested in status and prestige. A third group may value highly the fellowship and comradeship of their colleagues. And others may find their main rewards in their enjoyment of the work itself."(2)

It is arguable that the manual workers in waste collection in England and Wales are not interested in better status and prestige and they do not enjoy the work itself. Therefore, it is expected that money is the most important motivator for these workers. Due to that the incentive bonus schemes have been applied in this activity since the mid sixties.

According to these schemes a part of wages and salaries is related to productivity. In these schemes if productivity has increased, wages and salaries has to be increased too. The role of these schemes as a

motivator is supported by Herbert when he notes that money itself is not a motivator, but if a pay rise is seen as a reward or recognition for a job well done, then the money received will be a motivator.

The main purposes of applying the incentive bonus schemes in waste collection in England and Wales is to motivate the workers to work hard and that leads to: (1) the growth of productivity, (2) the reductions in costs per tonne, (3) the reductions in costs per person served, and (4) the increase in wages and salaries. By looking at Table 7.1 and Figure 7.1 we notice that the application of these schemes in waste collection in England and Wales have succeeded in achieving all of these purposes between 1978-79 and 1983-84. But that success during this period was accompanied by the reduction in the number of employed people which caused the increase in the unemployed people.

The applying of incetive bonus schemes in waste collection, as it is in any other activity, needs some kind of work study. Each local authority needs to make a work measurement in which the incentive bonus schemes will depend on. The importance of work study is mentioned by Richards when he points out that:

> "The introduction of any incentive payment usually involves some element of work measurement in order to define a norm that must be succeeded if additional payment is to be made, such measurement is another function of work study expert."(4)

The main purposes of the work study are mentioned by Fowler when he points out that:

> "The contribution of work study to an incentive payments schemes is thus to provide an objective technique for determining how much work should normally be achieved in a certain defined time. That is, work study provides a common base against which employee performance in a job can be assessed and on which monetary rewards can then be placed."(5)

The success or the failure of any incentive bonus scheme depends on work study and on the acceptance of the manual workers on this study. Therefore workers have to be represented in the committee responsible for this study through their unions. The success of any incentive scheme depends mainly on the acceptance of the trade unions of those schemes. This view is supported by Taylor (6) when he notes that if we want to increase productivity we have to enjoy good relationships with the unions and he adds that this is a fundamental requirement.

It is not easy for the unions of local government workers to accept the application of incentive bonus schemes in local government activities. In their view these schemes have their advantages and disadvantages. The application of these schemes is always accompanied by the growth in wages and salaries, but unfortunately it is always accompanied by the reduction in the level of staff which means the growth in unemployment.

The unions of local government workers always keep an eye on the level of staff in their negotiations with local government representatives. Therefore, it is expected that the negotiations to apply any incentive bonus scheme in any activity will be very difficult to negotiate and is very difficult to reach any agreement with trade unions.

Additionally, trade unions in local government in the U.K. is very strong compared with the other activities. In this case Fowler (7) notes that local government is one of the most highly unionised sectors of

employment in the U.K. Therefore, the local government representatives have to prepare themselves for difficult negotiations with these trade unions.

From the previous discussions, it is shown that there are many interesting subjects in waste collection activities in England and Wales which were beyond the scope of this research. These subjects are as follows:

1. Incentive bonus schemes in wast collection in each area in England and Wales.
2. The methods which are used in the work study in waste collection in each area in England and Wales.
3. The relationships between the representatives of the local governments and the unions of waste collection activities in each area in England and Wales.

These subjects need further discussion and analysis, so it is recommended their fuller research is undertaken to study one or more of these subjects.

Furthermore, it is shown in Table 7.4 that the second group contains only two variables. These are: (1) the square of the frequency of collection (X_2), and (2) the density of population (X_3). The previous one is included only in the statistical model of Metropolitan District, while the second one is included only in the statistical model of London Boroughs. Both variables are highly significant by 99%.

We can add another variable in this group. This variable is the average distance to disposal unit (X_6). This variable was significant by

95% when we built up a statistical model in London Boroughs which includes all the variables as shown in Table 7.3. But when we tried to build up a statistical model in this area which includes only the significant variables, this variable became insignificant as it is mentioned in Chapter 6 of this research. Therefore, this variable has been excluded from our significant variables, and we built up another statistical model with the remaining significant variables, as shown in Table 7.4

It is expected that three variables have a greater effect on costs per person served in waste collection in England and Wales than the other variables which are not statistically significant either by 95% or by 99% and included in group three, but they are not as important as the variables which are included in the first group.

From these variables we can note that there are two variables completely out of the control of management of waste collection activities. These two variables are: (1) the density of population, and (2) the average distance to disposal unit. The only variable which could be affected by the different management decisions, is the frequency of collection.

Waste is collected in England and Wales twice or more, once or less than once a week, as is shown in Columns 39, 40, 41, 42, 43 and 44 in Appendix B. The less frequent the collection the lower costs in waste collection. So, if the management wants to reduce the cost of waste collection, waste could be collected less frequently than before. If the management take that decision, it will face some problems with the customers, because the less frequent the collection, the lower quality in doing this service.

According to this variable the management could find itself in a dilemma. If it takes the decision in increasing the frequency of collection, the customers will be happy with the quality of doing this service but at the same time it means the higher costs of collection and higher costs per person served. And, if it takes the decision of reducing the frequency of collection, total costs and costs per person served will go down and the quality of doing this service will go down too.

According to this variable the management of waste collection could not take into account the two aspects of this service which are the economic aspects and the quality of doing this service. The management therefore, has to be very cautious in taking its decisions about the frequency of collection. It has to make a kind of compromise to keep the costs down with a reasonable quality of doing this service.

Additionally, it is shown in Table 7.3 that the third group contains the following variables. These variables are: (1) the methods of collection (X_2), (2) the crew size (X_7), (3) the use of specialist vehicles with compaction (X_9), (4) the rate of commercial waste (X_{10}), and (5) the use of disposable sacks (X_{12}). These variables are not statistically significant either by 95% or by 99%.

One of these variables is completely beyond the control of the management. This variable is the rate of commercial waste. The other variables need attention from the management although it is found that the impact of these variables on costs per person served is not significant because these variables affect the quality of doing this service moreover to its impact on costs per person served.

The first variable of these variables is the methods of collection. this variable also has two sides of effect, as well as the frequency of collection, and there is a contradiction between these two sides. The two sides are costs per person served and the quality of doing this service. More quality means more costs and vice versa. The management, therefore, has to take both sides into account in choosing the method or the methods of collection which are suitable to each district.

The second variable in this group is the crew size. This variable needs the attention of management although it has not a significant impact on costs per person served, because it has an impact on the quality of doing this service. The larger the crew size the more reliable collection of waste will be which means the districts will be cleaner and there will be less noise in collecting waste.

The other variable which did not affect costs per person served to any significant extent which surprised the researcher very much is the use of specialist vehicles with compaction (the more technologised vehicles). It is expected that this variable has to have a great impact on the running costs. The management could afford to pay more in capital costs to buy more technologised vehicles, because it would mean the reduction of its running costs. But in this case management paid more for capital costs and got nothing in running costs.

In spite of this result it is recommended that technically more advanced vehicles should be used because it has a greater impact on the quality of doing this service. The use of this kind of vehicle means

(1) less accidents and less injuries because they are better equiped than the others, (2) fewer repairs, less maintenance and fewer breakdowns, which reduces the disruption of doing this service, (3) waste which is kept in these vehicles does not spread when they are moving ;from one place to another, which means the district will be cleaner, (4) these vehicles are less noisey than the others.

The last variable in this group is the use of disposable sacks. This variable is recommended to be used also in spite of its insignificant relationship with costs per person served, because it has also a great impact on the quality of doing this service.

These disposable sacks have many advantages compared with other methods of storage. The advantages are: (1) they are easier to handle than the other methods, (2) this method is safer than the others which could cause injuries to waste collection workers, (3) this method is cleaner than the other methods, because waste could not be spread away in handling the disposable sacks, while it could be spread in handling other methods, (4) the use of these sacks keeps down the smell which builds up when waste is kept for a long time, and (5) the handling of these sacks is less noisey than the other methods.

7.3 References

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APPENDICES

Appendix A

SUMMARY OF WASTE COLLECTION STATISTICS IN ENGLAND AND WALES IN 1978-79 TILL 1983-84

WASTE COLLECTION STATISTICS 1978–79 ACTUALS

SUMMARY

TABLE 1 – NON-FINANCIAL DATA

	London Boroughs (inc. City) (31)	Metropolitan Districts (35)	Non-Met Districts England (230)	Non-Met Districts Wales (32)	Total England and Wales (328)
Population	6,549,900	11,210,000	22,509,390	2,498,900	42,768,190
Area (in hectares)	153,735	671,809	8,990,944	1,695,405	11,511,893
Hereditaments –					
Domestic	2,464,034	4,030,885	8,281,433	943,008	15,719,360
Commercial	552,233	655,928	1,344,492	132,058	2,684,711
Mixed	32,014	31,801	76,271	10,415	150,501
Industrial	14,600	36,795	54,383	4,886	110,664
Waste collected (in tonnes)	2,067,216	3,204,583	7,101,474	990,057	13,363,330
Disposable sacks used (000's) –					
Paper	2,170	4,840	8,843	781	16,634
Plastic	22,950	60,649	176,920	33,236	293,755
Bulk storage containers	4,651,167	3,715,205	5,011,906	377,545	13,755,823
Number of dustbins provided	13,890	268,795	135,921	4,668	423,274
Waste reclaimed –					
Paper (tonnes)	18,397	23,508	64,752	759	107,416
Vehicles (number)	4,898	2,596	6,546	922	14,962
Other (tonnes)	137	797	5,592	603	7,129
Collection vehicles –					
With compaction	1,485	2,115	4,035	480	8,115
Without compaction	142	270	277	55	744
General purpose	113	178	410	63	764
Total	1,740	2,663	4,722	598	9,623
Staff employed at 31.3.79 (f.t.e.)					
Drivers	930	1,593	2,064	397	4,984
Loaders	3,829	6,643	10,701	1,280	22,453
Driver/Loaders	842	970	2,293	129	4,234
Other manual staff	107	164	326	43	640
Vehicle maintenance staff	364	540	801	128	1,833
Technical & administrative staff	363	642	928	142	2,075
Total	6,435	10,552	17,113	2,119	36,219
Estimate of Total Waste Collected (tonnes)	*2,180,000*	*3,280,000*	*8,830,000*	*1,100,000*	*15,390,000*

TABLE 2 – FINANCIAL DATA

	£'000	£'000	£'000	£'000	£'000
EXPENDITURE					
Employees	31,387	42,918	73,023	7,933	155,261
Provision of disposable sacks	1,150	2,165	5,767	1,051	10,133
Provision of dustbins	92	937	529	35	1,593
Transport & moveable plant	13,100	17,200	31,513	4,485	66,298
Establishment expenses	3,375	4,581	6,987	597	15,540
Other running expenses	3,261	2,706	3,193	238	9,398
Agency services –					
Other local authorities	21	148	259	35	463
Contractors	419	–	427	27	873
Leasing charges	338	545	1,387	236	2,506
R.C.C.O.	42	93	717	180	1,032
Debt Charges –					
Principal	322	379	715	59	1,475
Interest	212	328	419	53	1,012
Gross Expenditure	53,719	72,000	124,936	14,929	265,584
INCOME					
Collection charges –					
Commercial waste	2,687	3,846	5,358	329	12,220
Bulky household waste	193	197	418	13	821
Other	997	453	1,002	118	2,570
Sales of reclaimed waste –					
Paper	418	621	1,770	12	2,821
Vehicles	12	6	14	1	33
Other	20	21	71	9	121
Contributions from other authorities –					
Waste disposal authority	938	580	684	–	2,202
Other local authority	82	7	164	37	290
Total Income	5,347	5,731	9,481	519	21,078
NET EXPENDITURE	48,372	66,269	115,455	14,410	244,506
Estimate of Total Expenditure	*51,090*	*69,540*	*143,480*	*15,510*	*279,620*

WASTE COLLECTION STATISTICS 1979-80 ACTUALS

SUMMARY

TABLE 1 - NON-FINANCIAL DATA

	London Boroughs (inc. City) (32)	Metropolitan Districts (35)	Non-Met Districts England (246)	Non-Met Districts Wales (29)	Total England and Wales (342)
Population	6,732,600	11,247,414	23,803,608	2,360,213	44,143,935
Area (in hectares)	156,443	682,995	9,848,308	1,504,889	12,192,635
Hereditaments —					
Domestic	2,672,733	4,150,675	7,865,150	888,704	15,477,262
Commercial	611,668	639,034	1,462,746	124,604	2,738,052
Mixed	38,449	52,270	93,935	7,673	192,327
Industrial	16,446	29,465	81,473	14,284	141,668
Staff employed at 31.3.80 (f.t.e)					
Drivers	897	1,465	2,019	346	4,727
Loaders	4,114	6,459	11,111	1,111	22,795
Driver/Loaders	926	983	2,818	120	4,847
Other manual staff	79	108	315	4	506
Vehicle maintenance staff	338	544	786	94	1,762
Technical & administrative staff	375	643	955	123	2,096
Total	6,729	10,202	18,004	1,798	36,733
Waste collected (in tonnes)	2,259,963	3,451,446	7,458,135	1,031,410	14,200,954
Disposable sacks used (000's) —					
Paper	3,420,410	5,071,420	10,487,433	540,000	19,519,263
Plastic	24,385,263	77,314,203	202,326,599	30,915,839	334, 941,904
Bulk storage containers	5,684,358	4,062,369	5,516,053	424,425	15,687,205
Number of dustbins provided	11,669	227,160	118,998	6,522	364,349
Waste reclaimed —					
Paper (tonnes)	20,921	23,172	76,720	—	120,813
Vehicles (number)	4,346	3,506	6,396	980	15,228
Glass	429	1,467	4,121	423	6,440
Oil	7	20	196	15	238
Ferrous Metals	132	565	3,233	—	3,930
Non-ferrous Metals	10	4	416	—	430
Other	—	473	742	—	1,215
No. of Bottle Banks in operation	17	38	64	5	124
Waste Oil collection points					
Petrol stations	3	27	91	—	121
Civic amenity sites	7	8	47	10	72
Other locations	4	6	29	6	45
Collection vehicles —					
With compaction	1,580	2,083	4,575	466	8,704
Without compaction	119	282	314	42	757
General purpose	163	176	438	53	830
Total	1,862	2,541	5,327	561	10,291
Estimate of Total Waste Collected (tonnes)	*2,310,000*	*3,500,000*	*8,810,000*	*1,210,000*	*15,830,000*

TABLE 2 — FINANCIAL DATA

EXPENDITURE	£'000	£'000	£'000	£'000	£'000
Employees	41,846	52,529	93,643	8,904	196,922
Provision of disposable sacks	1,437	3,971	8,921	1,210	15,539
Provision of dustbins	254	1,004	510	32	1,800
Transport & moveable plant	17,497	20,420	40,233	4,330	82,480
Establishment expenses	3,725	5,836	8,717	1,264	19,542
Other running expenses	2,655	3,090	4,111	223	10,079
Agency services —					
Other local authorities	15	364	520	—	899
Contractors	354	•	407	31	792
Leasing charges	566	880	2,339	285	4,070
R.C.C.O.	85	238	617	231	1,171
Debt Charges —					
Principal	255	462	909	61	1,687
Interest	211	459	533	57	1,260
Gross Expenditure	68,900	89,253	161,460	16,628	336,241
INCOME					
Collection charges —					
Commercial waste	3,601	4,761	7,009	402	15,773
Bulky household waste	247	222	553	8	1,030
Other	1,040	715	1,167	145	3,067
Sales of reclaimed waste —					
Paper	418	656	2,125	—	3,199
Vehicles	10	15	19	1	45
Glass	3	3	33	5	44
Oil	—	•	3	•	3
Ferrous Metals	1	6	16	—	23
Non-ferrous Metals	—	•	2	—	2
Other	26	41	51	4	122
Contributions from other authorities —					
Waste disposal authority	1,155	442	552	—	2,149
Other local authority	115	118	273	19	525
Total Income	6,616	6,979	11,803	584	25,982
NET EXPENDITURE	62,284	82,274	149,657	16,044	310,259
Estimate of Total Expenditure	*63,620*	*83,370*	*176,810*	*18,860*	*342,660*

WASTE COLLECTION STATISTICS 1980-81 ACTUALS

SUMMARY

TABLE 1 – NON-FINANCIAL DATA

	London Boroughs (inc. City) (30)	Metropolitan Districts (34)	Non-Met Districts England (271)	Non-Met Districts Wales (33)	Total England and Wales (368)
Population	6,149,100	10,586,500	26,094,400	2,472,700	45,302,700
Area (in hectares)	140,377	675,875	11,230,213	1,975,773	14,022,238
Hereditaments —					
Domestic	2,367,994	3,942,710	9,753,446	939,592	17,003,742
Commercial	457,744	599,800	1,640,588	169,721	2,867,853
Industrial	25,790	30,156	77,537	6,640	140,123
Other	68,156	74,049	176,799	17,971	336,975
Staff employed at 31.3.81 (f.t.e.)					
Drivers	810	1,204	2,170	341	4,525
Loaders	3,491	5,740	11,694	1,066	21,991
Driver/Loaders	852	857	2,980	152	4,841
Other manual staff	65	67	281	38	451
Vehicle maintenance staff	364	424	845	95	1,728
Technical & administrative staff	389	553	1,102	130	2,174
Total	5,971	8,845	19,072	1,822	35,710
Waste collected (in tonnes)	2,137,949	3,266,906	7,961,578	1,163,495	14,529,928
Disposable sacks used (000's) —					
Paper	1,847	4,319	10,857	790	17,813
Plastic	32,348	96,061	265,242	35,660	429,311
Bulk storage containers	83,494	64,271	111,680	5,112	264,557
Number of dustbins provided	11,329	162,973	125,957	5,658	305,917
Waste reclaimed —					
Paper (tonnes)	15,699	16,794	57,616	—	90,109
Vehicles (number)	5,897	3,333	11,470	1,240	21,940
Glass (tonnes)	2,870	3,321	13,865	425	20,481
Oil ('000 litres)	7	25	358	11	401
Ferrous Metals (tonnes)	68	925	3,499	—	4,492
Non-ferrous Metals (tonnes)	149	—	700	—	849
Other (tonnes)	—	71	684	—	755
No. of Bottle Banks in operation	38	69	278	5	390
Waste Oil collection points —					
Petrol stations	4	27	137	6	174
Civic amenity sites	13	8	69	6	96
Other locations	2	8	34	6	50
Collection vehicles —					
With compaction	1,420	1,915	4,712	487	8,534
Without compaction	97	224	303	34	658
General purpose	90	194	419	59	762
Total	1,607	2,333	5,434	580	9,954
Estimate of Total Waste Collected (tonnes)	*2,381,000*	*3,506,000*	*8,621,000*	*1,307,000*	*15,816,000*

TABLE 2 – FINANCIAL DATA

	£'000	£'000	£'000	£'000	£'000
EXPENDITURE					
Employees	44,735	56,045	117,326	10,756	228,862
Premises (depots etc.)	3,549	2,987	6,351	509	13,396
Provision of sacks	1,379	4,206	11,306	1,307	18,198
Provision of dustbins	335	891	681	52	1,959
Transport & moveable plant	18,091	23,345	54,544	6,134	102,114
Establishment expenses	3,999	6,126	11,316	915	22,356
Other running expenses	1,552	1,316	3,623	358	6,849
Agency services —					
Other Local Authorities	3	475	726	1	1,205
Contractors	271	7	332	32	642
Gross expenditure	73,914	95,398	206,205	20,064	395,581
INCOME					
Collection charges —					
Commercial waste	4,855	6,120	11,287	649	22,911
Bulky household waste	382	393	780	12	1,567
Other	941	796	1,552	142	3,431
Sales of reclaimed waste					
Paper	341	433	1,623	—	2,397
Vehicles	22	12	27	—	61
Glass	26	39	118	—	183
Oil	-	-	5	—	5
Ferrous Metals	—	7	11	—	18
Non-ferrous Metals	1	1	2	—	4
Other	37	32	62	13	144
Contributions from other authorities —					
Waste disposal authority	1,370	312	829	—	2,511
Other local authority	83	117	279	18	497
Total Income	8,058	8,262	16,575	834	33,729
NET EXPENDITURE	65,856	87,136	189,630	19,230	361,852
Estimate of Total Expenditure	*73,353*	*93,523*	*205,339*	*21,600*	*393,815*

WASTE COLLECTION STATISTICS 1981-82 ACTUALS

SUMMARY

TABLE 1 – NON-FINANCIAL DATA

	London Boroughs (inc. City) (31)	Metropolitan Districts (36)	Non-Met Districts England (272)	Non-Met Districts Wales (31)	Total England and Wales (370)
Population	6,401,300	11,364,700	26,765,300	2,225,700	46,757,000
Area (in hectares)	148,070	712,162	10,825,750	1,944,740	13,630,722
Hereditaments —					
Domestic	2,480,569	4,253,297	9,831,826	828,434	17,394,126
Commercial	516,018	638,235	1,653,568	111,705	2,919,526
Industrial	16,554	33,729	76,891	9,947	137,121
Other	104,023	86,658	181,319	17,862	389,862
Staff employed at 31.3.82 (f.t.e.)					
Drivers	858	1,205	1,925	304	4,292
Loaders	3,629	5,973	11,158	905	21,665
Driver/Loaders	702	906	2,883	126	4,617
Other manual staff	49	37	222	9	317
Vehicle maintenance staff	278	406	809	83	1,576
Technical & administrative staff	353	550	972	108	1,983
Total	5,869	9,077	17,969	1,535	34,450
Waste collected (in tonnes)	2,232,379	3,270,951	8,004,290	926,722	14,434,342
Disposable sacks used (000's) —					
Paper	986	5,794	7,161	1,020	14,961
Plastic	30,714	105,281	350,762	63,058	549,815
Bulk storage containers	90,521	71,971	113,740	3,705	279,937
Number of dustbins provided	17,902	170,699	121,396	4,194	314,191
Waste reclaimed —					
Paper (tonnes)	11,151	8,693	37,135	1	56,980
Vehicles (number)	6,924	5,791	15,409	1,009	29,133
Glass (tonnes)	4,466	4,826	27,383	311	36,986
Oil ('000 litres)	11	19	1,064	12	1,106
Ferrous Metals (tonnes)	105	917	3,117	—	4,139
Non-ferrous Metals (tonnes)	155	—	200	—	355
Other (tonnes)	—	—	316	—	316
No. of Bottle Banks in operation	71	101	438	5	615
Waste Oil collection points —					
Petrol stations	4	27	157	6	194
Civic amenity sites	15	7	72	6	100
Other locations	1	14	40	5	60
Collection vehicles —					
With compaction	1,406	2,012	4,521	429	8,368
Without compaction	216	203	256	25	700
General purpose	88	187	403	55	733
Total	1,710	2,402	5,180	509	9,801
Estimate of Total Waste Collected (tonnes)	*2,466,000*	*3,511,000*	*8,987,000*	*1,201,000*	*16,165,000*

TABLE 2 – FINANCIAL DATA

	£'000	£'000	£'000	£'000	£'000
EXPENDITURE					
Employees	50,103	67,006	125,566	9,541	252,216
Premises (depots etc.)	3,121	3,379	6,436	398	13,334
Provision of sacks	1,444	3,579	9,677	1,076	15,776
Provision of dustbins	110	867	588	48	1,613
Transport & moveable plant	19,403	23,160	56,424	5,620	104,607
Establishment expenses	4,562	7,754	12,566	1,242	26,124
Other running expenses	1,553	1,788	3,553	419	7,313
Agency services —					
Other Local Authorities	16	448	1,060	2	1,526
Contractors	373	3	1,737	19	2,132
Gross expenditure	80,685	107,984	217,607	18,365	424,641
INCOME					
Collection charges —					
Commercial waste	5,891	7,985	14,565	804	29,245
Bulky household waste	661	455	839	2	1,957
Other	1,419	1,052	1,510	60	4,041
Sales of reclaimed waste —					
Paper	243	188	910	—	1,341
Vehicles	27	17	36	1	81
Glass	58	56	222	—	336
Oil	—	1	3	—	4
Ferrous Metals	1	6	9	—	16
Non-ferrous Metals	—	—	3	—	3
Other	34	42	89	13	178
Contributions from other authorities —					
Waste disposal authority	1,253	777	836	—	2,866
Other local authority	105	8	417	13	543
Total Income	9,692	10,587	19,439	893	40,611
NET EXPENDITURE	70,993	97,397	198,168	17,472	384,030
Estimate of Total Expenditure	*75,986*	*97,397*	*211,528*	*22,035*	*402,946*

WASTE COLLECTION STATISTICS 1982-83 ACTUALS

SUMMARY

TABLE 1 – NON-FINANCIAL DATA

	London Boroughs (inc. City) (33)	Metropolitan Districts (36)	Non-Met Districts England (280)	Non-Met Districts Wales (36)	Total England and Wales (385)
Population	6,765,100	11,308,500	27,453,500	2,771,400	48,298,500
Area (in hectares)	158,747	697,466	11,725,989	2,001,262	14,583,464
Hereditaments —					
Domestic	2,670,436	4,265,628	10,222,756	1,055,963	18,214,783
Commercial	547,549	639,061	1,725,747	137,859	3,050,216
Industrial	16,881	33,634	82,254	7,440	140,209
Other	111,231	85,907	188,753	20,114	406,005
Staff employed at 31.3.83 (f.t.e.)					
Drivers	670	1,180	1,868	341	4,059
Loaders	3,273	5,636	10,619	982	20,510
Driver/Loaders	802	788	2,922	120	4,632
Other manual staff	80	30	207	22	339
Vehicle maintenance staff	293	411	775	110	1,589
Technical & administrative staff	334	623	972	121	2,050
Total	5,452	8,668	17,363	1,696	33,179
Waste collected (in tonnes)	2,485,760	3,224,865	8,144,296	1,215,567	15,070,488
Disposable sacks used (000's) —					
Paper	257	9,628	8,040	552	18,477
Plastic	36,066	153,590	506,038	59,345	755,039
Bulk storage containers	98,081	71,616	124,218	3,044	296,959
Number of dustbins provided	10,539	163,346	114,151	5,762	293,798
Waste reclaimed —					
Paper (tonnes)	9,497	6,748	32,499	—	47,744
Vehicles (number)	12,938	6,517	18,426	2,063	39,944
Glass (tonnes)	7,068	5,873	32,498	388	45,827
Oil ('000 litres)	22	26	471	5	524
Ferrous Metals (tonnes)	173	928	2,929	—	4,030
Non-ferrous Metals (tonnes)	88	—	152	—	240
Other (tonnes)	349	—	335	—	684
No. of Bottle Banks in operation	116	133	767	13	1,029
Waste Oil collection points —					
Petrol stations	16	27	229	6	278
Civic amenity sites	16	7	77	8	108
Other locations	1	11	46	7	65
Collection vehicles —					
With compaction	1,338	1,802	4,427	446	8,013
Without compaction	117	234	246	29	626
General purpose	65	175	392	61	693
Total	1,520	2,211	5,065	536	9,332
Estimate of Total Waste Collected (tonnes)	*2,485,760*	*3,459,683*	*9,135,134*	*1,345,931*	*16,426,508*

TABLE 2 – FINANCIAL DATA

	£'000	£'000	£'000	£'000	£'000
EXPENDITURE					
Employees	53,145	69,706	130,817	12,094	265,762
Premises (depots etc.)	4,356	3,320	6,202	741	14,619
Provision of sacks	1,462	3,403	10,248	1,297	16,410
Provision of dustbins	141	925	600	70	1,736
Transport & moveable plant	19,196	23,114	59,332	7,049	108,691
Establishment expenses	5,215	7,791	14,451	1,473	28,930
Other running expenses	1,878	1,827	3,393	538	7,636
Agency services -					
Other Local Authorities	12	310	1,240	18	1,580
Contractors	2,299	53	3,177	91	5,620
Gross expenditure	87,704	110,449	229,460	23,371	450,984
INCOME					
Collection charges —					
Commercial waste	7,384	9,283	16,524	1,118	34,309
Bulky household waste	319	532	705	16	1,572
Other	1,731	1,210	1,645	95	4,681
Sales of reclaimed waste —					
Paper	235	113	804	—	1,152
Vehicles	34	24	50	2	110
Glass	92	90	283	1	466
Oil	--	1	4	—	5
Ferrous Metals	1	7	9	—	17
Non-ferrous Metals	1	—	4	—	5
Other	16	44	38	—	98
Contributions from other authorities —					
Waste disposal authority	1,727	851	1,026	—	3,604
Other local authority	113	32	281	26	452
Total Income	11,653	12,187	21,373	1,258	46,471
NET EXPENDITURE	76,051	98,262	208,087	22,113	404,513
Estimate of Total Expenditure	*76,051*	*98,262*	*218,531*	*22,409*	*415,253*

SUMMARY

TABLE 1 – NON-FINANCIAL DATA

	London Boroughs (inc. City)	Metropolitan Districts	Non-Met Districts England	Non-Met Districts Wales	Total England and Wales
Population	6,589,100 (32)	11,272,000 (36)	26,428,400 (268)	2,623,500 (33)	46,913,000 (369)
Area (in hectares)	154,149 (32)	697,433 (36)	10,786,085 (268)	1,689,176 (33)	13,326,843 (369)
Hereditaments —					
Domestic	2,638,271	4,299,624	10,050,280	1,012,902	18,001,077
Commercial	541,167	635,012	1,710,349	138,771	3,025,299
Industrial	15,333	31,225	64,546	4,292	105,396
Other	111,694	89,567	215,409	23,437	440,107
Total	3,306,465 (32)	5,055,428 (36)	12,030,584 (268)	1,179,402 (33)	21,571,879 (369)
Staff employed at 31.3.84 (f.t.e.)					
Local Authority Employees					
Drivers	653	972	1,814	301	3,740
Loaders	3,107	4,907	9,484	957	18,455
Driver/Loaders	700	819	2,529	118	4,166
Other manual staff	35	34	145	13	227
Vehicle maintenance staff	276	416	693	104	1,489
Technical & administrative staff	297	523	832	111	1,763
Total	5,068 (32)	7,671 (34)	15,497 (262)	1,604 (33)	29,840 (361)
Total Contractors Employees	153 (2)	170 (2)	371 (16)	—	694 (20)
Waste collected (in tonnes)	2,461,585 (32)	3,259,440 (34)	7,781,969 (253)	1,288,404 (33)	14,791,398 (352)
Disposable sacks used (000's) —					
Paper	42 (32)	2,750 (36)	3,936 (265)	411 (33)	7,139 (366)
Plastic	37,339 (31)	150,134 (36)	326,602 (262)	44,751 (33)	558,826 (362)
Bulk storage containers					
with compaction	2,633 (31)	9,420 (36)	10,229 (264)	19 (32)	22,301 (363)
without compaction	92,902 (31)	68,833 (36)	111,530 (262)	5,303 (32)	278,568 (361)
Number of dustbins provided	6,908 (29)	142,631 (35)	98,227 (260)	12,049 (32)	259,815 (356)
Waste reclaimed —					
Paper (tonnes)	7,825 (32)	7,003 (36)	25,863 (263)	— (33)	40,691 (364)
Vehicles (number)	9,675 (29)	5,571 (36)	20,802 (257)	2,386 (32)	38,434 (354)
Glass (tonnes)	8,174 (31)	9,159 (36)	49,575 (263)	392 (32)	67,300 (362)
Oil ('000 litres)	31 (30)	12 (35)	168 (258)	32 (33)	243 (356)
Ferrous Metals (tonnes)	193 (32)	904 (35)	1,683 (262)	48 (33)	2,828 (362)
Non-ferrous Metals (tonnes)	37 (31)	10 (35)	210 (261)	— (33)	257 (360)
Other (tonnes)	— (32)	— (35)	788 (263)	— (33)	788 (363)
No. of Bottle Banks in operation	229 (32)	295 (36)	1,503 (266)	19 (33)	2,046 (367)
Waste Oil collection points —					
Civic amenity sites	6 (32)	17 (35)	71 (264)	19 (33)	113 (364)
Other locations (including petrol stations)	24 (30)	24 (33)	170 (256)	8 (32)	226 (351)
Collection vehicles —					
Local Authority					
With compaction	1,293	1,674	4,028	419	7,414
Without compaction	90	187	209	36	522
General purpose	86	149	367	47	649
Total	1,469 (32)	2,010 (35)	4,604 (264)	502 (33)	8,585 (364)
Contractors					
with compaction	40	41	122	1	204
without compaction	2	4	13	2	21
General purpose	2	—	16	—	18
Total	44 (2)	45 (2)	151 (16)	3 (2)	243 (22)
Estimate of Total Waste Collected (tonnes)	*2,523,376*	*3,496,988*	*8,999,124*	*1,378,914*	*16,398,402*

TABLE 2 – FINANCIAL DATA

	£'000	£'000	£'000	£'000	£'000
EXPENDITURE					
Employees	51,367	64,426	126,640	12,311	254,744
Premises (depots etc.)	4,024	3,064	6,142	721	13,951
Provision of sacks	1,614	4,796	10,856	1,358	18,624
Provision of dustbins	252	800	530	42	1,624
Transport & moveable plant	19,431	23,325	54,996	6,750	104,502
Establishment expenses	5,155	8,183	14,322	1,550	29,210
Other running expenses	1,418	1,436	3,097	515	6,466
Agency services —					
Other Local Authorities	8	468	1,644	3	2,123
Contractors	2,268	1,245	5,911	77	9,501
Gross expenditure	85,537	107,743	224,138	23,327	440,745
INCOME					
Collection charges —					
Commercial waste	7,596	8,914	17,142	1,101	34,753
Bulky household waste	255	649	799	22	1,725
Other	1,669	1,372	1,747	109	4,897
Sales of reclaimed waste —					
Paper	206	107	595	—	908
Vehicles	44	25	64	4	137
Glass	121	98	340	2	561
Oil	—	•	3	1	4
Ferrous Metals	3	5	16	1	25
Non-ferrous Metals	•	•	4	—	4
Other	17	100	32	•	149
Contributions from other authorities —					
Waste disposal authority	1,656	432	1,112	—	3,200
Other local authority	106	11	437	14	568
Total Income	11,673	11,713	22,291	1,254	46,931
NET EXPENDITURE	73,864 (32)	96,030 (36)	201,847 (268)	22,073 (33)	393,814 (369)
Estimate of Total Expenditure	*75,718*	*96,030*	*220,108*	*23,624*	*415,480*

N.B. Figures in brackets indicate number of authorities included in each of the totals.

Appendix B

THE ACTUAL STATISTICS OF WASTE COLLECTION IN ENGLAND AND WALES IN 1983-84

Local Authority	POPULATION & AREA			NUMBER OF HEREDITAMENTS				WASTE COLLECTED – BY WEIGHT			% OF TOTAL WASTE COLLECTED BY CONTRACTORS	
	Population at 30.6.83	Area	Density of population at 30.6.83	Domestic	Commercial	Industrial	Other	Total weight of all waste	Actual or estimated weight of all waste	Estimated % of waste weighed	Routine collections	Abnormal circumstances
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	'000	hectares	per hectare					tonnes		%	%	%
LONDON BOROUGHS												
City of London	5.5	274	20.07	2,935	12,880	21	1,897	52,295	A	100	–	–
INNER												
Camden	175.5	2,171	80.84	78,192	23,145	571	3,564	90,000	E	100	–	–
Greenwich	216.1	4,744	45.55	84,881	16,278	325	5,341	66,790	E	95	–	–
Hackney	186.7	1,948	95.84	74,815	14,631	2,043	2,292	79,897	A	100	–	–
Hammersmith & Fulham	150.3	1,617	92.95	65,488	8,681	305	1,110	70,332	A	–	–	–
Islington	162.7	1,489	109.27	68,583	15,338	626	2,823	82,461	A	100	–	–
Kensington & Chelsea	134.1	1,195	112.22	71,773	12,167	117	2,748	72,657	A	96	13	–
Lambeth	245.0	2,727	89.84	104,621	20,189	431	14,554	106,792	A	100	–	–
Lewisham	231.9	3,473	66.77	96,143	20,909	316	1,138	69,044	A	100	–	–
Southwark	213.4	2,880	74.79	95,091	25,396	797	16,607	96,160	A	100	–	–
Tower Hamlets	144.0	1,973	72.99	61,120	14,144	1,954	1,249	77,827	A	100	–	–
Wandsworth	258.4	3,492	74.00	104,885	21,054	425	16,756	84,000	A	100	100	–
Westminster	184.1	2,158	85.31	96,424	38,498	24	5,425	194,115	A	95	–	–
OUTER												
Barking & Dagenham	150.1	3,419	43.90	58,223	10,783	182	708	38,962	A	100	–	–
Barnet	294.4	8,953	32.88	111,786	20,640	299	1,392	91,380	A	100	–	–
Bexley	217.9	6,065	35.93	82,340	15,431	353	4,358	57,638	A	100	–	–
Brent	254.0	4,421	57.45	93,539	13,178	624	1,077	101,032	E	78	–	–
Bromley	299.2	15,179	19.71	116,180	20,250	157	5,325	83,186	A	–	–	–
Croydon	320.6	8,658	37.03	120,161	25,701	552	5,004	98,205	A	100	–	–
Ealing	283.9	5,547	51.18	104,982	18,078	694	1,479	89,449	E	87	–	–
Enfield	263.1	8,115	32.42	99,036	17,310	478	1,212	87,605	A	100	–	–
Haringey	204.7	3,031	67.54	82,302	14,569	559	1,063	70,166	A	100	–	–
Harrow	199.4	5,082	39.24	74,835	11,721	104	749	49,000	E	100	–	–
Havering	240.3	11,776	20.41	88,125	12,563	407	818	69,059	E	70	–	–
Hillingdon	234.2	11,037	21.22	86,446	15,053	570	1,206	53,033	A	–	–	–
Hounslow	200.9	5,852	34.33	76,650	16,214	411	822	62,100	E	98	–	–
Kingston-upon-Thames	133.6	3,756	35.57	53,227	11,927	258	2,195	45,850	E	**	–	–
Merton												
Newham	210.3	3,637	57.82	80,066	14,577	478	1,269	80,473	A	100	–	–
Redbridge	227.0	5,647	40.20	85,838	14,798	158	1,406	69,023	A	100	–	–
Richmond-upon-Thames	160.9	5,525	29.12	68,798	15,439	261	4,533	56,666	A	100	–	–
Sutton	169.7	4,342	39.08	66,292	15,513	225	708	47,727	A	100	–	–
Waltham Forest	215.2	3,966	54.26	84,494	14,112	608	866	68,661	A	100	–	–
METROPOLITAN DISTRICTS												
GREATER MANCHESTER												
Bolton	261.8	13,973	18.74	99,739	12,400	705	1,577	96,488	E	50	2	–
Bury	174.8	9,918	17.62	67,087	9,246	472	1,151	64,811	E	20	–	–
Manchester	457.5	11,621	39.37	173,564	29,549	1,344	4,803	**	**	**	–	–
Oldham	220.9	14,112	15.65	86,574	14,752	787	1,340	70,442	A	100	–	–
Rochdale	206.4	15,976	12.92	79,528	14,437	636	1,327	58,636	A	100	–	–
Salford	245.0	9,687	25.29	94,508	12,947	686	1,617	91,156	E	20	–	–
Stockport	288.9	12,605	22.92	111,455	13,763	777	1,169	103,923	A	100	–	–
Tameside	216.3	10,323	20.95	84,320	14,222	970	1,278	97,000	E	**	–	–
Trafford	218.7	10,365	20.70	84,062	10,789	358	1,039	43,997	E	30	–	–
Wigan	308.2	19,894	15.49	116,797	14,680	535	1,377	**	**	–	–	–
MERSEYSIDE												
Knowsley	170.8	9,739	17.54	58,207	5,891	203	1,318	41,327	A	100	–	–
Liverpool	502.5	11,291	44.50	192,446	23,562	941	7,115	173,500	E	95	–	–
St Helens	189.2	13,347	14.18	69,162	7,403	348	774	70,850	E	80	–	–
Sefton	299.8	15,054	19.91	109,192	14,776	403	1,722	84,000	E	66	–	–
Wirral	338.5	15,772	21.46	130,798	17,740	452	1,554	95,545	A	100	81	–
SOUTH YORKSHIRE												
Barnsley	224.8	32,863	6.84	85,508	10,032	251	1,580	114,920	E	–	–	–
Doncaster	289.8	58,153	4.98	108,118	10,509	266	1,462	99,831	E	39	–	–
Rotherham	253.2	28,278	8.95	94,327	12,096	358	1,339	92,125	E	–	–	–
Sheffield	542.7	36,756	14.76	212,843	30,294	1,573	2,558	175,300	E	85	–	–
TYNE AND WEAR												
Gateshead	210.2	14,323	14.68	84,661	12,626	395	995	67,530	E	67	–	–
Newcastle-upon-Tyne	281.2	11,187	25.14	114,716	17,678	408	2,081	97,325	E	51	–	–
North Tyneside	195.0	8,377	23.28	80,542	10,545	325	1,065	70,500	E	90	–	–
South Tyneside	159.5	6,357	25.09	62,918	7,506	246	933	71,760	E	77	–	–
Sunderland	299.4	13,762	21.76	113,209	15,842	653	1,381	104,380	A	92	–	–
WEST MIDLANDS												
Birmingham	1012.9	26,430	38.32	376,304	71,146	4,261	4,149	267,078	A	100	–	–
Coventry	315.9	9,654	32.72	117,390	18,412	763	1,075	81,748	A	93	4	–
Dudley	300.9	9,794	30.72	114,076	16,305	1,429	4,413	68,993	A	80	–	–
Sandwell	307.3	8,559	35.90	116,904	17,738	1,536	14,891	87,000	E	–	–	–
Solihull	199.9	18,007	11.10	72,078	13,246	102	812	48,160	E	–	–	–
Walsall	265.3	10,606	25.01	96,097	17,289	1,350	4,448	68,750	E	50	–	–
Wolverhampton	255.4	6,892	37.06	95,200	18,302	922	4,331	76,880	A	88	–	–
WEST YORKSHIRE												
Bradford	463.9	36,657	12.66	173,827	26,402	1,774	3,381	106,580	E	87	–	–
Calderdale	192.0	36,377	5.28	76,837	13,900	958	1,583	49,800	E	76	–	–
Kirklees	377.3	40,992	9.20	146,574	22,974	1,472	2,559	112,196	E	41	–	–
Leeds	714.0	56,215	12.70	279,322	41,668	2,060	3,539	196,909	E	**	–	–
Wakefield	312.1	33,317	9.37	118,734	14,345	506	1,631	110,000	E	–	–	–

1983-84 ACTUALS

WASTE COLLECTED - BY TYPE			WASTE COLLECTED - BY METHOD OF STORAGE				METHODS OF COLLECTION						
							HOUSEHOLD WASTE						
Household waste (13)	Commercial waste (14)	Industrial waste (15)	Contained in dustbins (16)	Contained in disposable sacks (17)	Contained in bulk storage containers (18)	Other (19)	Backdoor collect & return (20)	Kerbside (21)	Other collect & return (22)	Skep (23)	Other normal methods (24)	Special collections (25)	Local Authority
%	%	%	%	%	%	%	%	%	%	%	%	%	
													LONDON BOROUGHS
5	95	-	7	56	37	-	-	-	-	-	100	-	City of London
													INNER
90	5	5	55	25	15	5	10	45	-	-	40	5	Camden
85	15	-	64	1	30	5	58	-	-	8	30	4	Greenwich
80	20	-	40	←	55	5	10	25	-	20	40	5	Hackney
49	41	10	52	9	23	16	5	68	-	-	26	1	Hammersmith & Fulham
**	**	**	55	-	45	-	-	-	100	-	-	-	Islington
100	←	-	62	←	36	2	42	18	-	-	36	4	Kensington & Chelsea
**	**	**	52	-	48	-	80	-	20	-	-	-	Lambeth
75	25	←	75	6	19	-	24	5	60	-	3	8	Lewisham
**	**	**	**	**	**	**	15	-	34	-	48	3	Southwark
91	9	-	44	-	56	-	-	30	70	-	-	-	Tower Hamlets
90	10	-	75	10	15	-	10	5	70	-	15	-	Wandsworth
35	65	-	15	30	55	-	30	30	30	-	8	2	Westminster
													OUTER
90	10	-	47	37	12	4	-	-	37	54	6	3	Barking & Dagenham
**	**	**	85	←	14	1	70	-	-	15	14	1	Barnet
90	-	10	90	-	9	1	-	-	-	90	9	1	Bexley
77	13	10	58	6	14	22	83	-	-	-	12	5	Brent
85	15	-	79	-	20	1	2	-	-	80	17	1	Bromley
**	**	**	74	3	18	5	20	-	-	80	-	-	Croydon
89	11	-	-	63	13	20	13	-	63	-	16	4	Ealing
89	8	3	70	-	14	16	-	-	-	100	-	-	Enfield
81	19	←	35	35	30	-	20	35	25	-	-	**	Haringey
80	20	-	42	28	30	-	70	-	-	-	20	10	Harrow
85	10	5	-	90	10	-	1	80	8	-	10	1	Havering
87	13	-	85	-	15	-	-	-	-	100	-	-	Hillingdon
79	21	←	-	68	24	8	84	-	-	-	15	1	Hounslow
84	16	-	80	5	10	5	100	-	-	-	-	-	Kingston-upon-Thames
													Merton
95	5	-	75	-	23	2	5	95	-	-	-	-	Newham
90	10	-	69	10	17	4	-	-	86	-	11	3	Redbridge
85	15	-	70	-	25	5	90	-	-	-	7	3	Richmond-upon-Thames
85	15	-	55	30	15	-	100	-	-	-	-	-	Sutton
76	17	7	38	29	25	8	8	24	48	-	17	3	Waltham Forest
													METROPOLITAN DISTRICTS
													GREATER MANCHESTER
91	9	-	49	34	3	14	100	-	-	-	-	-	Bolton
92	7	1	67	2	6	25	84	-	14	-	1	1	Bury
**	**	**	**	**	**	**	**	**	**	**	**	**	Manchester
76	12	12	47	23	20	10	80	-	-	-	5	15	Oldham
80	20	←	80	←	←	20	100	-	-	-	-	-	Rochdale
87	12	1	-	64	17	19	66	-	-	-	11	23	Salford
85	15	-	4	74	20	2	87	-	-	-	11	2	Stockport
66	29	5	-	50	40	10	100	-	-	-	-	-	Tameside
76	24	-	46	44	10	-	100	-	-	-	-	-	Trafford
**	**	**	**	**	**	**	100	-	-	-	-	-	Wigan
													MERSEYSIDE
94	4	2	63	17	10	10	90	-	-	-	8	2	Knowsley
92	8	-	61	20	9	10	90	-	-	-	8	2	Liverpool
95	5	-	35	55	10	-	99	-	-	-	-	1	St Helens
90	10	-	-	90	10	-	100	-	-	-	-	-	Sefton
91	9	←	73	9	15	3	87	-	-	-	12	1	Wirral
													SOUTH YORKSHIRE
89	11	-	74	15	7	4	100	-	-	-	-	-	Barnsley
84	16	-	50	35	10	5	89	-	-	-	3	8	Doncaster
87	13	-	77	-	11	12	99	-	-	-	1	-	Rotherham
90	10	-	77	6	12	5	100	-	-	-	-	-	Sheffield
													TYNE AND WEAR
91	7	2	76	9	8	7	100	-	-	-	-	-	Gateshead
75	22	3	59	17	21	3	86	-	-	-	3	11	Newcastle-upon-Tyne
**	**	**	**	**	**	**	**	-	**	-	**	**	North Tyneside
80	15	5	70	5	18	7	90	-	-	-	-	10	South Tyneside
83	12	5	64	16	15	5	81	-	-	-	7	12	Sunderland
													WEST MIDLANDS
**	**	**	-	71	19	10	100	-	-	-	-	-	Birmingham
88	10	2	-	76	19	5	100	-	-	-	-	-	Coventry
98	2	-	-	85	12	3	85	-	-	-	12	3	Dudley
93	6	1	62	-	16	22	78	-	-	-	20	2	Sandwell
89	11	-	-	73	27	←	83	-	-	-	16	1	Solihull
93	5	-	71	1	16	12	82	-	-	-	16	2	Walsall
94	5	1	83	←	14	3	92	-	-	-	7	1	Wolverhampton
													WEST YORKSHIRE
86	13	1	81	←	16	3	86	-	-	-	10	4	Bradford
**	**	**	74	15	8	3	60	2	-	34	3	1	Calderdale
78	22	←	-	90	10	←	100	-	-	-	-	-	Kirklees
87	13	-	-	85	13	2	98	-	-	-	-	2	Leeds
70	30	-	80	15	col 16	5	100	-	-	-	-	-	Wakefield

Local Authority	METHODS OF COLLECTION: COMMERCIAL WASTE: Backdoor collect & return (26)	Kerbside (27)	Other collect & return (28)	Skep (29)	Other normal methods (30)	Special collections (31)	Collection system (See Notes) (32)	NUMBER OF DISPOSABLE SACKS USED: Paper (33)	Plastic (34)
	%	%	%	%	%	%		'000	'000
LONDON BOROUGHS									
City of London	-	80	-	10	8	2	C	-	72
INNER									
Camden	-	-	-	-	20	80	T	-	800
Greenwich	40	-	6	15	27	12	T	-	100
Hackney	20	65	-	-	15	-	T	-	**
Hammersmith & Fulham	-	70	-	-	30	-	T	-	641
Islington	-	-	47	-	53	-	T	-	-
Kensington & Chelsea	42	18	-	-	36	4	T	-	1,499
Lambeth	40	-	-	-	60	-	B	11	500
Lewisham	15	60	5	-	20	-	T	-	3
Southwark	10	4	55	-	30	1	T	-	3,276
Tower Hamlets	-	10	90	-	-	-	C	-	-
Wandsworth	60	10	5	-	20	5	C	-	-
Westminster	-	30	8	-	60	2	T	11	48
OUTER									
Barking & Dagenham	-	-	35	-	60	5	T	-	2,400
Barnet	**	**	**	**	**	**	T	-	900
Bexley	-	-	3	-	96	1	T	-	722
Brent	10	-	-	69	21	-	T	-	4
Bromley	-	-	-	30	68	2	T	-	-
Croydon	-	-	32	-	68	-	T	-	1,000
Ealing	32	-	22	-	46	-	T	-	7,466
Enfield	-	3	-	97	-	-	T	-	-
Haringey	5	80	15	-	-	**	T	-	3,000
Harrow	45	-	-	-	50	5	T	-	398
Havering	-	30	-	-	70	-	T	-	5,086
Hillingdon	-	-	-	25	75	-	T	-	5
Hounslow	6	-	-	-	88	6	T	-	6,842
Kingston-upon-Thames	100	-	-	-	-	-	T	20	-
Merton									
Newham	50	50	-	-	-	-	T	-	-
Redbridge	-	-	84	-	15	1	T	-	677
Richmond-upon-Thames	80	-	-	-	20	-	T	-	-
Sutton	100	-	-	-	-	-	T	-	1,900
Waltham Forest	11	37	-	-	52	-	T	-	-
METROPOLITAN DISTRICTS									
GREATER MANCHESTER									
Bolton	100	-	-	-	-	-	T	-	3,000
Bury	15	-	-	-	85	-	T	-	480
Manchester	**	**	**	**	**	**	T	-	13,343
Oldham	86	-	-	-	9	5	T	750	2,000
Rochdale	100	-	-	-	-	-	B	-	5,600
Salford	50	-	-	-	40	10	T	-	6,152
Stockport	100	-	-	-	-	-	T	-	7,000
Tameside	100	-	-	-	-	-	B	-	6,200
Trafford	100	-	-	-	-	-	T	-	4,500
Wigan	**	**	**	**	**	**	T	-	52
MERSEYSIDE									
Knowsley	90	-	-	-	10	-	T	-	600
Liverpool	86	-	-	-	14	-	C	-	-
St Helens	60	-	-	-	40	-	T	-	4,400
Sefton	100	-	-	-	-	-	B	-	4,220
Wirral	34	-	-	-	50	16	T	3	890
SOUTH YORKSHIRE									
Barnsley	100	-	-	-	-	-	T	-	1,050
Doncaster	8	15	-	-	75	2	T	1,122	1,671
Rotherham	18	-	-	-	82	-	C	15	13
Sheffield	100	-	-	-	-	-	T	676	360
TYNE AND WEAR									
Gateshead	100	-	-	-	-	-	T	5	468
Newcastle-upon-Tyne	25	-	-	-	68	7	B	-	1,500
North Tyneside	**	-	**	-	**	**	T	-	1,487
South Tyneside	90	-	-	-	10	-	T	-	215
Sunderland	17	-	-	-	83	-	B	-	2,156
WEST MIDLANDS									
Birmingham	100	-	-	-	-	-	T	-	24,562
Coventry	100	-	-	-	-	-	T	-	6,250
Dudley	100	-	-	-	-	-	T	-	4,000
Sandwell	30	-	-	-	70	-	T	-	-
Solihull	-	-	-	-	100	-	C	-	4,316
Walsall	92	-	-	-	6	2	T	25	-
Wolverhampton	32	-	-	-	64	4	C	154	-
WEST YORKSHIRE									
Bradford	49	3	-	-	48	-	B	-	11,045
Calderdale	60	2	-	34	3	1	T	-	854
Kirklees	100	-	-	-	-	-	T	-	10,000
Leeds	100	-	-	-	-	-	C	-	19,500
Wakefield	100	-	-	-	-	-	T	-	2,250

NUMBER OF BULK STORAGE CONTAINERS		PROVISION OF DUSTBINS/ SACKHOLDERS		FREQUENCY OF COLLECTION PER WEEK						
				NORMAL HOUSEHOLD WASTE			COMMERCIAL WASTE			
With compaction (35)	Without compaction (36)	Charge (See Notes) (37)	Number (38)	Twice or more (39)	Once (40)	Less than once (41)	Twice or more (42)	Once (43)	Less than once (44)	Local Authority
				%	%	%	%	%	%	
										LONDON BOROUGHS
-	438	F	232	100	-	-	100	-	-	City of London
										INNER
-	3,200	N	50	100	-	-	50	40	10	Camden
2	4,100	N	-	-	100	-	5	95	-	Greenwich
4	4,620	N	-	30	70	-	50	50	-	Hackney
2	3,460	N	-	5	95	-	20	80	-	Hammersmith & Fulham
50	3,770	F	3,460	5	95	-	13	87	-	Islington
19	2,542	C	-	100	-	-	100	-	-	Kensington & Chelsea
-	8,600	N	**	-	100	-	50	50	-	Lambeth
-	300	N	-	5	95	-	10	90	-	Lewisham
-	4,075	N	-	60	40	-	40	60	-	Southwark
**	**	N	-	70	30	-	5	95	-	Tower Hamlets
-	6,000	N	-	-	100	-	15	85	-	Wandsworth
40	4,100	C	**	95	5	-	100	-	-	Westminster
										OUTER
-	742	F	400	-	100	-	12	88	-	Barking & Dagenham
-	4,000	C	5	2	98	-	2	98	-	Barnet
-	1,597	F	369	-	100	-	2	98	-	Bexley
-	3,300	C	463	-	100	-	12	88	-	Brent
-	3,532	N	-	1	99	-	20	80	-	Bromley
-	3,600	N	-	-	100	-	17	83	-	Croydon
-	3,448	F	1,500	2	98	-	18	82	-	Ealing
2,516	-	N	-	5	95	-	4	94	2	Enfield
-	3,300	C	51	5	95	-	15	85	-	Haringey
-	2,028	N	90	-	100	-	10	90	-	Harrow
-	1,993	N	-	2	98	-	12	87	1	Havering
-	3,000	N	-	-	100	-	-	100	-	Hillingdon
-	3,964	C	88	5	95	-	19	80	1	Hounslow
-	2,100	F	-	-	100	-	5	95	-	Kingston-upon-Thames
										Merton
-	3,000	F	**	5	95	-	77	22	1	Newham
-	2,005	C	-	1	99	-	1	99	-	Redbridge
-	2,000	N	-	-	100	-	10	90	-	Richmond-upon-Thames
-	2,038	N	-	-	100	-	-	100	-	Sutton
-	2,050	C	200	16	84	-	36	64	-	Waltham Forest
										METROPOLITAN DISTRICTS
										GREATER MANCHESTER
11	10	C	-	-	100	-	23	77	-	Bolton
2	1,046	F	-	-	100	-	1	98	1	Bury
51	4,794	**	11,120	2	98	-	70	30	-	Manchester
8	1,400	F	4,000	-	100	-	20	80	-	Oldham
-	950	C	285	-	100	-	-	100	-	Rochdale
-	2,572	C	1,287	7	93	-	5	90	5	Salford
-	3,000	C	974	-	100	-	20	80	-	Stockport
2	1,238	F	1,975	-	100	-	-	100	-	Tameside
-	1,400	C	5,000	-	100	-	15	85	-	Trafford
-	1,550	C	-	-	100	-	15	85	-	Wigan
										MERSEYSIDE
-	450	C	235	2	98	-	30	70	-	Knowsley
-	1,700	N	-	12	88	-	50	49	1	Liverpool
6	2,700	C	815	-	100	-	2	98	-	St Helens
1,900	-	N	-	-	100	-	50	50	-	Sefton
-	2,088	N	-	3	97	-	19	81	-	Wirral
										SOUTH YORKSHIRE
-	957	C	670	-	100	-	2	98	-	Barnsley
2	2,080	F	9,000	-	100	-	10	90	-	Doncaster
-	1,360	F	8,000	-	100	-	6	94	-	Rotherham
-	4,642	F	18,674	-	100	-	20	80	-	Sheffield
										TYNE AND WEAR
1	760	F	4,205	-	100	-	10	90	-	Gateshead
12	1,350	N	-	-	100	-	55	44	1	Newcastle-upon-Tyne
-	786	F	**	-	100	-	**	**	**	North Tyneside
5	575	C	400	-	100	-	17	83	-	South Tyneside
-	1,054	F	5,217	-	100	-	13	87	-	Sunderland
										WEST MIDLANDS
6	8,150	F	8,500	-	100	-	20	80	-	Birmingham
4	3,600	N	-	-	100	-	15	85	-	Coventry
2,143	-	F	2,000	-	100	-	10	90	-	Dudley
25	3,279	F	12,000	5	95	-	5	95	-	Sandwell
-	1,950	N	-	-	100	-	15	85	-	Solihull
-	2,250	F	6,914	1	99	-	6	94	-	Walsall
5	2,923	C	7,195	-	100	-	10	75	15	Wolverhampton
										WEST YORKSHIRE
8	2,960	N	-	1	99	-	2	98	-	Bradford
-	816	F	4,101	3	97	-	3	97	-	Calderdale
-	2,614	F	6,064	-	100	-	10	84	6	Kirklees
5,229	-	F	12,000	-	100	-	15	85	-	Leeds
-	1,829	F	12,000	-	100	-	5	90	5	Wakefield

Local Authority	NUMBER OF BOTTLE BANKS		WASTE OIL COLLECTION POINTS		AMOUNT OF WASTE				
	Owned & operated by the local authority (45)	Other (46)	Owned & operated by the local authority (47)	Other (e.g. garages) (48)	Paper (49)	Abandoned Vehicles (50)	Glass (51)	Oil (52)	Ferrous Metals (53)
					tonnes	no.	tonnes	'000 litres	tonnes
LONDON BOROUGHS									
City of London	-	-	-	-	-	-	-	-	-
INNER									
Camden	12	-	-	-	-	342	78	-	-
Greenwich	6	-	-	**	20	232	610	-	-
Hackney	-	-	-	-	-	**	**	-	-
Hammersmith & Fulham	-	-	-	-	-	288	-	-	-
Islington	-	-	-	-	-	475	-	-	-
Kensington & Chelsea	-	-	1	-	-	-	-	-	-
Lambeth	-	-	1	1	43	180	-	2	-
Lewisham	-	25	-	-	-	216	415	-	-
Southwark	-	-	-	-	-	483	-	-	-
Tower Hamlets	-	-	-	-	-	208	-	-	-
Wandsworth	-	10	-	-	-	**	40	-	-
Westminster	-	-	-	-	2,499	640	-	-	-
OUTER									
Barking & Dagenham	-	18	1	-	-	484	10	-	-
Barnet	3	1	-	2	-	435	440	-	-
Bexley	-	-	-	-	-	-	-	-	-
Brent	6	-	-	-	-	817	497	-	1
Bromley	-	-	-	-	-	246	-	-	-
Croydon	-	-	2	-	200	1,099	-	**	-
Ealing	22	1	-	1	-	717	821	-	89
Enfield	-	36	-	-	-	-	1,106	-	-
Haringey	-	7	-	1	-	722	-	-	-
Harrow	5	3	1	-	-	382	589	5	-
Havering	-	28	-	1	3,013	-	673	-	103
Hillingdon	3	-	-	-	-	135	400	-	-
Hounslow	6	-	-	-	-	140	656	-	-
Kingston-upon-Thames	7	-	-	-	-	-	527	-	-
Merton	-	-	-	-	2,050	**	-	-	-
Newham	-	16	-	14	-	181	46	24	-
Redbridge	8	-	-	-	-	135	942	-	-
Richmond-upon-Thames	-	3	-	1	-	313	181	-	-
Sutton	3	-	-	3	-	785	143	**	-
Waltham Forest									
METROPOLITAN DISTRICTS									
GREATER MANCHESTER									
Bolton	7	-	-	-	216	98	492	-	-
Bury	-	10	1	-	-	40	200	1	-
Manchester	12	-	**	**	4,104	611	448	**	**
Oldham	12	-	3	-	-	124	440	3	80
Rochdale	-	12	-	-	-	189	680	-	-
Salford	-	-	-	-	-	180	-	-	-
Stockport	-	18	3	-	-	189	778	-	-
Tameside	7	10	-	-	484	123	311	-	-
Trafford	3	-	-	-	-	-	217	-	-
Wigan	-	3	-	-	-	67	78	-	244
MERSEYSIDE									
Knowsley	-	-	-	-	-	-	-	-	-
Liverpool	5	-	-	1	-	112	-	-	-
St Helens	7	-	-	-	-	-	357	-	-
Sefton	-	3	-	-	-	-	-	-	-
Wirral	7	-	-	-	-	148	208	-	8
SOUTH YORKSHIRE									
Barnsley	-	-	-	-	-	92	-	-	-
Doncaster	-	-	-	-	-	158	-	-	-
Rotherham	-	-	-	-	-	92	-	-	70
Sheffield	-	-	-	-	611	355	-	-	-
TYNE AND WEAR									
Gateshead	-	-	-	-	-	50	-	-	3
Newcastle-upon-Tyne	-	-	-	-	-	182	-	-	-
North Tyneside	4	-	5	-	-	53	245	1	-
South Tyneside	-	-	-	1	-	119	-	-	195
Sunderland	-	-	2	-	-	290	-	6	304
WEST MIDLANDS									
Birmingham	7	-	-	-	-	197	766	-	-
Coventry	2	-	-	**	-	386	248	-	-
Dudley	6	-	2	22	-	221	790	-	-
Sandwell	-	-	-	-	-	27	-	-	-
Solihull	-	-	-	-	-	25	-	-	-
Walsall	-	-	-	-	-	-	-	-	-
Wolverhampton	-	-	-	-	-	35	-	-	-
WEST YORKSHIRE									
Bradford	-	81	-	-	-	60	479	-	-
Calderdale	8	-	1	-	-	41	253	1	-
Kirklees	5	-	-	-	-	184	211	-	-
Leeds	37	-	-	**	1,588	860	1,766	-	-
Wakefield	-	9	-	-	-	263	192	-	-

RECLAIMED		NUMBER OF LOCAL AUTHORITY'S COLLECTION VEHICLES				NUMBER OF CONTRACTORS' COLLECTION VEHICLES				
		SPECIALIST				SPECIALIST				
Non-Ferrous Metals (54)	Other (55)	With compaction (56)	Without compaction (57)	General purpose (58)	Total (59)	With compaction (60)	Without compaction (61)	General purpose (62)	Total (63)	Local Authority
tonnes	tonnes									
										LONDON BOROUGHS
-	-	27	9	-	36	-	-	-	-	City of London
										INNER
-	-	66	-	-	66	-	-	-	-	Camden
-	-	48	1	-	49	-	-	-	-	Greenwich
-	-	62	4	8	74	-	-	-	-	Hackney
-	-	29	1	-	30	-	-	-	-	Hammersmith & Fulham
-	-	33	15	-	68	-	-	1	1	Islington
-	-	27	5	-	32	col 59				Kensington & Chelsea
35	-	73	-	25	98	-	-	-	-	Lambeth
-	-	48	-	7	55	-	-	-	-	Lewisham
-	-	73	15	-	88	-	-	-	-	Southwark
-	-	45	-	1	46	-	-	-	-	Tower Hamlets
-	-	**	**	**	**	40	2	1	43	Wandsworth
-	-	88	14	2	104	-	-	-	-	Westminster
										OUTER
-	-	23	2	-	25	-	-	-	-	Barking & Dagenham
-	-	62	-	-	62	-	-	-	-	Barnet
-	-	38	-	2	40	-	-	-	-	Bexley
-	-	48	3	5	56	-	-	-	-	Brent
-	-	37	-	2	39	-	-	-	-	Bromley
-	-	50	1	5	56	-	-	-	-	Croydon
-	-	36	1	7	44	-	-	-	-	Ealing
-	-	41	4	1	46	-	-	-	-	Enfield
-	-	31	-	12	43	-	-	-	-	Haringey
-	-	27	1	-	28	-	-	-	-	Harrow
2	-	28	3	1	32	-	-	-	-	Havering
-	-	31	-	-	31	-	-	-	-	Hillingdon
-	-	29	1	3	33	-	-	-	-	Hounslow
-	-	20	-	2	22	-	-	-	-	Kingston-upon-Thames
										Merton
-	-	20	2	1	23	**	**	**	**	Newham
-	-	29	2	-	31	-	-	-	-	Redbridge
-	-	32	-	-	32	-	-	-	-	Richmond-upon-Thames
-	-	21	-	-	21	-	-	-	-	Sutton
-	-	31	6	2	39	-	-	-	-	Waltham Forest
										METROPOLITAN DISTRICTS
										GREATER MANCHESTER
-	-	45	4	-	49	**	**	**	**	Bolton
-	-	23	2	5	30	-	-	-	-	Bury
**	**	105	24	-	129	-	-	-	-	Manchester
-	-	42	5	6	53	-	-	-	-	Oldham
-	-	33	3	8	44	-	-	-	-	Rochdale
-	-	46	6	1	53	-	-	-	-	Salford
-	-	30	1	2	33	-	-	-	-	Stockport
-	-	38	12	3	53	-	-	-	-	Tameside
-	-	35	-	5	40	-	-	-	-	Trafford
-	-	43	7	5	55	-	-	-	-	Wigan
										MERSEYSIDE
-	-	28	7	-	35	-	-	-	-	Knowsley
-	-	111	15	-	126	-	-	-	-	Liverpool
8	-	34	2	1	37	-	-	-	-	St Helens
-	-	44	-	-	44	-	-	-	-	Sefton
-	-	**	**	**	**	41	2	-	43	Wirral
										SOUTH YORKSHIRE
-	-	43	4	3	50	-	-	-	-	Barnsley
-	-	55	2	8	65	-	-	-	-	Doncaster
-	-	40	3	5	48	-	-	-	-	Rotherham
-	-	85	6	13	104	-	-	-	-	Sheffield
										TYNE AND WEAR
2	-	32	1	4	37	-	-	-	-	Gateshead
-	-	48	12	-	60	-	-	-	-	Newcastle-upon-Tyne
-	-	32	4	6	42	-	-	-	-	North Tyneside
-	-	25	4	6	35	-	-	-	-	South Tyneside
-	-	47	28	-	75	-	-	-	-	Sunderland
										WEST MIDLANDS
-	-	89	14	12	115	-	-	-	-	Birmingham
-	-	32	1	2	35	-	2	-	2	Coventry
-	-	27	2	7	36	-	-	-	-	Dudley
-	-	48	-	6	54	-	-	-	-	Sandwell
-	-	32	1	3	36	-	-	-	-	Solihull
-	-	39	-	1	40	-	-	-	-	Walsall
-	-	40	6	5	51	-	-	-	-	Wolverhampton
										WEST YORKSHIRE
-	-	68	4	1	73	-	-	-	-	Bradford
-	-	39	-	-	39	-	-	-	-	Calderdale
-	-	64	2	-	66	-	-	-	-	Kirklees
-	-	76	5	22	103	-	-	-	-	Leeds
-	-	56	-	9	65	-	-	-	-	Wakefield

Local Authority	LOCAL AUTHORITY STAFF EMPLOYED AT 31.3.84								EXPENDITURE			
	Drivers (64)	Loaders (65)	Drivers/ Loaders (66)	Other manual (67)	Vehicle maintenance (68)	Technical & administrative (69)	Total (70)	Contractors' manual employees (71)	Employees (72)	Premises/ depots (73)	Provision of disposable sacks (74)	Provision of dustbins (75)
	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	£	£	£	£
LONDON BOROUGHS												
City of London	24	41	-	-	13	4	82	-	969,545	332,118	1,400	5,939
INNER												
Camden	84	160	40	-	13	16	313	-	2,468,115	258,189	53,399	-
Greenwich	29	83	-	-	9	10	133	-	1,383,023	68,227	122,669	-
Hackney	-	73	116	4	10	13	216	-	2,242,410	74,117	-	-
Hammersmith & Fulham	-	71	20	-	15	11	117	-	1,093,829	248,432	27,675	330
Islington	-	141	49	-	11	8	209	-	1,504,938	70,771	4,740	58,977
Kensington & Chelsea	-	49	34	-	20	18	121	18	1,366,945	402,761	72,547	39,157
Lambeth	-	64	128	-	20	20	232	-	2,263,311	402,239	67,400	-
Lewisham	35	93	-	-	6	8	142	-	1,532,996	165,159	-	1,981
Southwark	76	266	-	-	16	10	368	-	2,943,023	195,127	111,388	-
Tower Hamlets	27	130	-	-	7	10	174	-	1,287,461	196,303	-	-
Wandsworth	**	**	**	**	**	8	8	135	148,809	45,202	-	65,538
Westminster	60	221	36	5	34	20	376	-	4,575,095	506,267	22,858	522
OUTER												
Barking & Dagenham	17	64	8	-	2	1	92	-	905,340	18,828	80,432	-
Barnet	40	148	28	4	**	15	235	-	2,268,154	37,882	31,624	1,583
Bexley	24	68	12	-	-	9	113	-	1,314,810	83,938	19,395	9,101
Brent	56	166	-	-	9	8	239	-	2,135,169	89,560	7,885	13,355
Bromley	38	161	6	-	7	7	219	-	1,981,963	77,734	8,484	-
Croydon	55	142	-	2	6	13	218	-	1,835,669	56,086	21,400	-
Ealing	2	118	64	2	4	13	203	-	1,855,005	218,460	227,554	31,257
Enfield	20	116	13	3	10	6	168	-	1,451,806	102,117	-	-
Haringey	3	85	34	-	19	15	156	-	1,512,475	75	136,795	34
Harrow	22	114	-	-	8	10	154	-	1,674,403	35,610	29,388	-
Havering	-	88	22	15	4	3	132	-	1,277,236	62,730	239,320	-
Hillingdon	-	104	23	-	3	9	139	-	1,380,319	7,544	4,422	11,636
Hounslow	-	59	26	-	5	2	92	-	965,995	13,906	203,512	12,073
Kingston-upon-Thames	17	64	6	-	2	7	96	-	851,103	17,579	26,852	-
Merton												
Newham	21	69	-	4	8	8	110	**	1,526,113	13,765	-	-
Redbridge	-	92	26	-	5	10	133	-	1,206,403	134,370	14,747	-
Richmond-upon-Thames	23	76	12	-	2	6	121	-	1,200,158	**	-	-
Sutton	15	52	-	-	2	4	73	-	852,136	55,700	78,123	-
Waltham Forest	3	75	23	-	6	10	119	-	1,393,029	33,201	-	-
METROPOLITAN DISTRICTS												
GREATER MANCHESTER												
Bolton	36	137	-	-	8	6	187	**	1,373,084	51,219	82,027	-
Bury	-	67	**	-	**	2	69	-	625,388	12,445	2,868	33,779
Manchester	-	229	99	7	38	20	393	-	3,806,511	361,105	239,381	37,307
Oldham	44	103	3	-	10	11	173	-	1,446,703	54,621	114,720	31,258
Rochdale	-	97	42	-	-	-	139	-	1,087,330	35,048	183,680	-
Salford	-	120	48	-	15	14	197	-	1,264,633	145,605	196,547	11,600
Stockport	-	93	33	-	8	12	146	-	1,065,690	5,100	200,965	44,902
Tameside	48	122	-	2	5	10	187	-	1,503,607	44,703	203,370	6,024
Trafford	-	109	42	-	5	6	162	-	1,154,602	68,071	139,081	12,810
Wigan	37	199	29	-	10	20	295	-	1,872,120	88,158	1,109	-
MERSEYSIDE												
Knowsley	36	116	-	-	2	9	163	-	920,013	21,991	5	1,809
Liverpool	92	369	-	-	70	35	566	-	4,481,731	197,500	96,532	-
St Helens	30	118	-	-	3	15	166	-	1,496,177	32,620	116,695	10,943
Sefton	21	99	-	-	16	5	141	-	1,657,264	84,458	143,345	-
Wirral	**	**	**	**	**	6	6	168	693,798	1,742	731	2,196
SOUTH YORKSHIRE												
Barnsley	38	142	9	13	4	6	212	-	1,483,299	70,710	39,134	-
Doncaster	-	147	60	2	7	10	226	-	1,752,517	33,154	233,939	27,915
Rotherham	37	148	2	-	7	7	201	-	1,497,926	17,930	2,561	39,108
Sheffield	-	351	112	-	25	59	547	-	4,646,752	256,121	66,812	149,455
TYNE AND WEAR												
Gateshead	27	108	5	-	**	**	140	-	1,234,916	14,493	17,408	16,568
Newcastle-upon-Tyne	43	154	-	-	14	4	215	-	1,779,234	127,825	15,121	-
North Tyneside	24	98	10	-	6	-	138	-	1,213,491	13,746	50,916	15,755
South Tyneside	26	93	6	-	-	8	133	-	939,772	40,242	26,899	-
Sunderland	39	144	12	-	14	10	219	-	1,803,056	125,925	65,577	23,333
WEST MIDLANDS												
Birmingham	-	149	174	-	45	63	431	-	4,681,250	291,670	822,548	62,792
Coventry	29	116	-	2	10	10	167	2	1,599,388	66,440	187,061	-
Dudley	-	90	29	-	5	13	137	-	1,276,333	77,691	189,865	20,846
Sandwell	49	169	-	4	6	12	240	-	1,983,117	96,431	-	32,850
Solihull	42	36	17	-	-	8	103	-	1,033,899	42,546	176,290	-
Walsall	42	129	-	-	4	9	184	-	1,473,863	64,451	4,500	44,158
Wolverhampton	-	122	42	4	5	18	191	-	1,600,770	89,271	14,322	30,289
WEST YORKSHIRE												
Bradford	79	214	3	-	12	29	337	-	2,460,257	80,501	204,335	-
Calderdale	32	119	-	-	7	12	170	-	1,229,969	46,198	28,267	12,116
Kirklees	25	145	33	-	16	23	242	-	2,076,262	14,574	223,415	22,960
Leeds	76	289	12	-	30	28	435	-	2,422,915	207,708	618,863	36,349
Wakefield	47	141	-	-	9	25	222	-	1,788,915	81,811	67,484	52,584

1983-84 ACTUALS

EXPENDITURE						INCOME			
			AGENCY SERVICES			COLLECTION SERVICES			
Transport & moveable plant (76)	Establishment expenses (77)	Other running expenses (78)	Other local authorities (79)	Contractors (80)	Gross Expenditure (81)	Commercial waste (82)	Bulky household waste (83)	Other (84)	Local Authority
£	£	£	£	£	£	£	£	£	
									LONDON BOROUGHS
314,974	128,002	193	-	-	1,752,171	232,712		-	City of London
									INNER
1,027,087	56,015	19,022	-	22,729	3,904,556	208,655	14,215	66,425	Camden
696,943	264,921	42,065	-	-	2,377,848	90,411	-	45,727	Greenwich
1,331,517	41,890	84,331	-	2,862	3,777,127	141,320	-	104,801	Hackney
395,225	130,672	12,766	-	76,458	1,985,387	403,770	2,847	418	Hammersmith & Fulham
873,696	241,068	48,545	-	3,342	2,806,077	592,098	108,892	5,068	Islington
273,963	35,809	29,793	1,062	213,244	2,457,283	769,367	-	91,246	Kensington & Chelsea
1,231,919	548,427	79,539	-	-	4,392,835	444,875		-	Lambeth
708,669	142,628	17,131	-	2,169	2,570,733	163,306	-	55,678	Lewisham
1,917,458	5,080	13,883	39	-	5,186,000	455,657	-	68,239	Southwark
795,802	325,020	55,770	-	1,144	2,661,500	170,069	-	28,128	Tower Hamlets
10,704	289,584	53,750	-	1,872,843	2,486,430	29,663	6,123	271,169	Wandsworth
1,084,360	374,660	228,063	-	-	6,791,825	241,388	-	269,732	Westminster
									OUTER
236,441	105,769	67,458	-	17,469	1,431,737	66,754	13,448	-	Barking & Dagenham
780,106	9,845	113,210	-	-	3,242,404	183,402	-	151,404	Barnet
384,321	219,008	24,719	221	-	2,055,713	119,508	4,365	11,416	Bexley
379,964	204,652	89,862	-	-	3,120,447	247,458	-	292,222	Brent
416,110	255,679	7,492	-	-	2,747,462	272,918	17,890	46,096	Bromley
748,286	96,854	69,209	-	-	2,827,504	318,640	5,937	49,553	Croydon
619,164	39,503	36,824	92	27,847	3,055,706	272,219	4,898	2,680	Ealing
544,957	428,032	57,659	-	7,220	2,591,791	184,909	11,310	34,291	Enfield
639,036	223,609	29,809	-	-	2,541,853	208,304	-	4,906	Haringey
395,400	166,276	29,978	535	10,898	2,342,488	117,390	23,514	318	Harrow
501,337	269,459	11,988	-	-	2,362,070	240,302	2,026	3,481	Havering
350,360	49,384	41	-	-	1,803,706	246,713	-	21,449	Hillingdon
428,194	32,301	22,511	708	-	1,679,200	293,213	-	21,469	Hounslow
273,302	153,534	16,307	-	-	1,338,677	168,319	17,899	-	Kingston-upon-Thames
									Merton
306,145	174,720	76,039	-	7,689	2,104,471	63,344	-	196	Newham
464,069	2,743	2,938	-	-	1,825,270	164,469	13,239	7,373	Redbridge
349,184	-	35,998	-	-	1,585,340	161,194	-	461	Richmond-upon-Thames
106,338	47,339	24,641	-	-	1,164,277	48,305	4,250	-	Sutton
646,022	71,961	16,605	5,785	-	2,166,603	274,916	4,167	15,449	Waltham Forest
									METROPOLITAN DISTRICTS
									GREATER MANCHESTER
337,301	56,992	10,886	-	26,455	2,137,964	94,067	3,214	48,393	Bolton
688,636	154,595	23,738	-	-	1,541,449	79,232	13,459	48,759	Bury
1,193,790	757,948	101,586	-	-	6,537,628	568,405	2,124	-	Manchester
831,567	17,427	72,687	-	-	2,588,983	108,351	-	94,413	Oldham
342,516	202,862	14,509	-	-	1,863,943	96,933	-	-	Rochdale
546,361	145,110	15,269	-	-	2,325,325	199,830	13,561	9,014	Salford
493,980	93,904	13,500	-	-	1,920,041	225,253	14,977	41,729	Stockport
389,164	122,155	50,413	-	-	2,319,436	175,639	41,605	54,102	Tameside
419,784	321,695	9,530	-	-	2,125,573	143,253	1,512	6,002	Trafford
639,264	306,937	67,353	-	-	2,974,941	109,583	179,525	-	Wigan
									MERSEYSIDE
284,000	162,712	-	1,140	-	1,391,670	23,092	3,490	-	Knowsley
2,267,558	705,657	39,827	-	-	7,788,805	560,594	-	182,186	Liverpool
474,384	124,052	10,882	-	-	2,265,753	105,605	-	56,130	St Helens
639,230	122,607	11,159	-	-	2,658,083	191,511	5,264	-	Sefton
233,885	77,446	44,036	-	1,184,316	2,238,150	41,874	-	192,612	Wirral
									SOUTH YORKSHIRE
569,848	173,163	26,732	-	-	2,362,886	103,863	2,540	12,579	Barnsley
560,986	133,111	14,827	48,653	-	2,805,102	201,951	-	7,641	Doncaster
368,065	164,374	3,220	27,068	-	2,120,252	183,623	35,624	358	Rotherham
1,188,580	248,130	39,155	-	-	6,595,005	330,223	26,454	-	Sheffield
									TYNE AND WEAR
402,095	142,397	6,460	35,250	-	1,869,587	147,881	808	18,532	Gateshead
585,324	193,932	-	95,685	-	2,797,121	382,744	-	90,621	Newcastle-upon-Tyne
468,747	230,238	1,097	-	1,825	1,995,815	86,076	-	13,310	North Tyneside
460,181	63,521	19,960	-	-	1,550,575	127,396	-	16,742	South Tyneside
357,511	1,715	18,780	-	-	2,395,897	262,667	68,395	28,875	Sunderland
									WEST MIDLANDS
1,147,137	315,828	86,359	3,988	-	7,411,572	900,822	-	3,040	Birmingham
495,687	277,497	61,982	-	31,764	2,719,819	309,656	20,264	13,199	Coventry
377,392	7,313	32,508	-	-	1,981,948	150,038	3,393	8,566	Dudley
820,426	3,382	15,119	-	-	2,951,325	306,597	26,929	41,762	Sandwell
498,444	80,741	30,590	-	-	1,862,510	127,705	1,469	5,096	Solihull
287,466	78,268	27,725	-	-	1,980,431	140,173	-	-	Walsall
465,909	75,722	72,309	-	-	2,348,592	180,597	2,786	37,711	Wolverhampton
									WEST YORKSHIRE
853,437	212,484	81,794	1,219	-	3,894,027	289,129	46,196	11,054	Bradford
394,873	96,425	29,316	-	-	1,837,164	63,438	-	2,130	Calderdale
920,085	124,412	46,055	161,997	-	3,589,760	588,918	8,680	140,277	Kirklees
1,351,034	1,808,014	297,781	-	-	6,742,664	830,919	117,008	173,111	Leeds
729,738	378,246	38,935	93,254	399	3,231,366	476,942	10,108	14,374	Wakefield

Local Authority	INCOME: SALES OF RECLAIMED WASTE: Paper (85)	Abandoned Vehicles (86)	Glass (87)	Oil (88)	Ferrous Metals (89)	Non-Ferrous Metals (90)	Other (91)	CONTRIBUTIONS FROM OTHER AUTHORITIES: Waste Disposal Authority (92)	Other local authorities (93)	Total Income (94)	Total Net Expenditure (95)
	£	£	£	£	£	£	£	£	£	£	£
LONDON BOROUGHS											
City of London	-	-	-	-	-	-	47	-	-	232,759	1,519,412
INNER											
Camden	-	-	-	-	-	-	-	-	-	289,295	3,615,261
Greenwich	-	5,423	10,801	-	2,259	-	4,581	238,457	-	417,659	2,160,189
Hackney	-	3,243	-	-	-	-	-	130,574	-	379,938	3,397,189
Hammersmith & Fulham	-	-	-	-	-	-	-	12,147	-	419,182	1,566,205
Islington	-	430	-	-	-	-	-	828	3,204	710,320	2,093,537
Kensington & Chelsea	-	-	-	-	-	-	-	5,512	754	866,879	1,590,404
Lambeth	-	-	-	-	-	-	-	71,390	-	516,265	4,076,570
Lewisham	-	1,402	3,881	-	-	-	-	361,132	-	585,399	1,985,334
Southwark	-	-	-	-	-	-	-	6,193	-	530,089	4,655,911
Tower Hamlets	-	-	-	-	-	-	-	-	52,383	250,780	2,410,720
Wandsworth	-	-	-	-	-	-	-	56,803	50	363,808	2,122,622
Westminster	72,874	-	-	-	-	-	-	75,850	15,000	674,844	6,116,981
OUTER											
Barking & Dagenham	-	5,249	76	-	-	-	-	18,238	24,043	127,808	1,303,929
Barnet	-	2,384	5,587	-	-	-	238	54,727	-	397,742	2,844,662
Bexley	-	-	-	-	-	-	-	221,239	-	356,528	1,699,185
Brent	-	363	7,912	-	-	-	-	-	-	547,955	2,572,492
Bromley	-	-	180	-	-	-	-	-	-	337,084	2,410,378
Croydon	-	1,587	-	-	-	-	-	37,282	-	412,999	2,414,505
Ealing	-	5,442	23,468	-	-	-	-	-	535	309,242	2,746,464
Enfield	2,552	7,180	1,489	-	-	-	-	7,510	-	249,441	2,342,350
Haringey	-	-	-	-	-	-	-	88,000	-	301,210	2,240,643
Harrow	-	1,844	11,860	-	-	-	-	21,254	4,314	180,694	2,161,794
Havering	93,514	-	6,559	-	700	15	-	112,068	-	458,665	1,903,405
Hillingdon	-	622	-368	-	147	-	-	35,595	-	304,158	1,499,548
Hounslow	-	-	12,693	-	-	-	-	-	4,898	332,273	1,346,927
Kingston-upon-Thames	-	-	5,025	-	-	-	679	-	-	191,922	1,146,755
Merton											
Newham	36,768	8,170	60	-	-	-	11,768	8,337	-	128,643	1,975,828
Redbridge	-	-	-	-	-	-	-	26,947	-	212,028	1,613,242
Richmond-upon-Thames	-	774	29,254	-	-	-	-	8,565	-	200,248	1,385,092
Sutton	-	-	2,180	-	-	-	-	-	-	54,935	1,109,342
Waltham Forest	-	-	674	-	-	-	-	36,706	-	331,912	1,834,691
METROPOLITAN DISTRICTS											
GREATER MANCHESTER											
Bolton	1,790	662	8,108	-	-	-	-	-	9,753	165,987	1,991,977
Bury	40	102	710	36	-	-	-	-	-	142,338	1,399,111
Manchester	92,304	3,992	5,828	-	190		492	-	-	673,335	5,864,293
Oldham	-	-	8,203	-	-	-	-	-	-	210,967	2,378,016
Rochdale	-	554	625	-	-	-	-	-	-	98,112	1,767,833
Salford	-	-	-	-	-	-	-	-	-	222,403	2,102,920
Stockport	-	-	2,317	-	-	-	-	-	-	284,476	1,635,565
Tameside	4,784	185	8,131	-	23	-	-	-	-	284,469	2,034,967
Trafford	-	-	3,484	-	-	-	-	-	-	154,251	1,971,322
Wigan	-	-	-	-	1,067	-	-	-	-	290,175	2,684,766
MERSEYSIDE											
Knowsley	-	-	-	-	-	-	-	-	-	26,582	1,365,088
Liverpool	-	-	-	-	-	-	-	-	-	742,780	7,046,025
St Helens	-	-	-	-	-	-	-	-	-	161,739	2,104,018
Sefton	-	-	-	-	-	-	-	-	-	196,775	2,461,308
Wirral	-	264	4,045	-	-	38	-	554	-	239,387	1,998,763
SOUTH YORKSHIRE											
Barnsley	-	-	-	-	-	-	-	-	-	118,982	2,243,904
Doncaster	121	-	-	-	-	-	-	-	1,078	210,791	2,594,311
Rotherham	-	-	-	-	112	-	-	-	-	219,717	1,900,535
Sheffield	4,032	-	-	-	-	-	-	-	-	360,709	6,234,296
TYNE AND WEAR											
Gateshead	-	-	-	-	-	-	-	-	-	167,221	1,702,366
Newcastle-upon-Tyne	-	815	-	-	-	-	-	-	-	474,180	2,322,941
North Tyneside	-	-	5,293	142	-	-	-	349	-	105,170	1,890,645
South Tyneside	-	766	-	-	710	-	-	-	-	145,614	1,404,961
Sunderland	-	3,364	-	-	2,725	-	-	-	-	366,026	2,029,871
WEST MIDLANDS											
Birmingham	55	-	16,310	-	-	-	99,317	193,060	-	1,212,604	6,198,968
Coventry	-	8,383	5,409	-	-	-	-	10,000	-	366,911	2,352,908
Dudley	-	-	15,049	72	-	-	-	15,000	-	192,118	1,789,830
Sandwell	-	5,129	-	-	-	-	-	77,800	-	458,217	2,493,108
Solihull	-	-	-	-	-	-	-	60,000	-	194,270	1,668,240
Walsall	-	-	-	-	-	-	-	75,000	-	215,173	1,765,258
Wolverhampton	3,720	37	-	-	-	-	-	-	-	224,851	2,123,741
WEST YORKSHIRE											
Bradford	-	276	5,196	-	-	-	-	-	-	351,851	3,542,176
Calderdale	-	-	4,781	-	-	-	-	-	-	70,349	1,766,815
Kirklees	-	-	4,181	-	-	-	-	-	-	742,056	2,847,704
Leeds	-	-	-	-	-	-	-	-	-	1,121,038	5,621,626
Wakefield	-	-	41	-	-	-	-	-	-	501,465	2,729,901

CAPITAL EXPENDITURE ON REPLACEMENT VEHICLES				COSTS OF COLLECTION					
				COST PER TONNE					
Revenue (96)	Loan (97)	Repairs & Renewals Fund (98)	Lease (99)	Gross (100)	Net (101)	Net cost per domestic hereditament (102)	Net cost per head of population (103)	Waste collected per head of population (104)	Local Authority
£'000	£'000	£'000	£'000	£	£	£	£	kg	
									LONDON BOROUGHS
-	65	-	-	33.91	29.05	517.69	276.26	9,508	City of London
									INNER
-	-	-	388	43.38	40.17	46.24	20.60	513	Camden
-	-	-	372	38.60	32.34	25.45	10.00	309	Greenwich
-	92	-	21	47.27	42.52	45.41	18.20	428	Hackney
-	-	-	-	28.23	22.27	23.92	10.42	468	Hammersmith & Fulham
-	-	-	178	34.03	25.45	30.56	12.88	507	Islington
-	3	-	-	33.81	21.88	22.16	11.86	542	Kensington & Chelsea
-	29	-	411	43.01	38.17	38.97	16.64	436	Lambeth
-	-	-	871	37.23	28.75	20.65	8.56	298	Lewisham
-	-	-	-	53.93	48.42	48.96	21.62	446	Southwark
-	-	-	-	34.20	31.65	39.44	16.74	540	Tower Hamlets
-	-	-	-	29.60	25.27	20.24	8.21	325	Wandsworth
-	-	478	-	34.99	31.59	63.44	33.23	1,054	Westminster
									OUTER
63	-	-	-	36.75	34.08	22.40	8.69	260	Barking & Dagenham
-	380	-	-	35.48	31.13	25.45	9.66	310	Barnet
-	-	-	43	35.66	29.48	20.64	7.80	265	Bexley
-	-	-	130	30.89	25.46	27.50	10.13	398	Brent
-	-	870	-	33.03	28.98	20.75	8.06	278	Bromley
-	-	146	-	28.79	24.59	20.09	7.53	306	Croydon
-	-	-	-	34.16	30.71	26.16	9.67	315	Ealing
-	-	248	-	29.58	26.74	23.65	8.90	333	Enfield
-	4	-	-	36.23	31.93	27.22	10.95	343	Haringey
-	-	-	-	47.79	44.20	28.89	10.84	246	Harrow
-	-	52	-	34.20	27.56	21.60	7.92	287	Havering
-	-	-	-	34.01	28.28	17.35	6.40	226	Hillingdon
-	-	-	223	27.03	21.76	17.57	6.70	309	Hounslow
-	-	138	-	29.20	25.01	21.54	8.58	343	Kingston-upon-Thames
									Merton
-	14	-	-	26.15	24.55	24.68	9.40	383	Newham
-	-	-	177	26.44	23.37	18.79	7.11	304	Redbridge
-	-	171	-	27.98	24.44	20.13	8.61	352	Richmond-upon-Thames
-	-	-	-	24.39	23.24	16.73	6.54	281	Sutton
-	-	-	70	31.47	26.64	21.71	8.53	319	Waltham Forest
									METROPOLITAN DISTRICTS
									GREATER MANCHESTER
-	-	-	176	22.37	20.75	19.97	7.61	369	Bolton
-	-	-	474	23.78	21.39	20.86	8.00	371	Bury
-	-	-	385	**	**	33.40	12.82	**	Manchester
-	26	9	192	36.75	33.76	27.47	10.77	319	Oldham
-	-	-	108	31.82	30.15	22.23	8.57	284	Rochdale
-	-	217	-	25.51	23.07	22.25	8.58	372	Salford
-	-	-	170	18.48	15.74	14.67	5.66	360	Stockport
-	-	16	53	23.91	20.98	24.13	9.41	448	Tameside
-	-	-	-	48.31	44.81	23.43	9.01	201	Trafford
-	1	-	83	**	**	22.99	8.71	**	Wigan
									MERSEYSIDE
-	-	195	-	33.65	33.00	23.45	7.99	242	Knowsley
-	-	-	-	44.89	40.61	36.61	14.02	345	Liverpool
-	-	-	-	31.98	29.70	30.42	11.12	374	St Helens
-	-	-	-	31.64	29.30	22.54	8.21	280	Sefton
-	-	-	-	23.43	20.92	15.28	5.90	282	Wirral
									SOUTH YORKSHIRE
-	-	-	264	20.56	19.53	26.24	9.98	511	Barnsley
-	-	-	199	27.61	25.51	24.00	8.95	344	Doncaster
-	-	-	165	22.72	20.34	20.15	7.51	364	Rotherham
-	538	-	-	37.62	35.56	29.29	11.49	323	Sheffield
									TYNE AND WEAR
-	-	31	-	27.16	24.69	20.11	8.10	321	Gateshead
-	-	-	28	27.76	22.88	20.25	8.26	346	Newcastle-upon-Tyne
-	-	-	138	28.31	26.82	23.47	9.70	362	North Tyneside
-	-	-	249	21.61	19.58	22.33	8.81	450	South Tyneside
-	-	-	63	22.95	19.45	17.93	6.78	349	Sunderland
									WEST MIDLANDS
-	972	-	-	27.74	23.20	16.47	6.12	264	Birmingham
-	-	105	-	33.27	28.78	20.04	7.45	259	Coventry
-	-	-	124	28.73	25.94	15.69	5.95	229	Dudley
-	-	211	-	33.92	28.66	21.33	8.11	283	Sandwell
-	-	-	-	38.67	34.64	23.14	8.35	241	Solihull
-	-	-	93	28.81	25.68	18.37	6.65	259	Walsall
-	-	-	42	30.55	27.62	22.31	8.32	301	Wolverhampton
									WEST YORKSHIRE
-	-	263	-	36.52	33.22	20.38	7.64	230	Bradford
-	-	21	-	36.89	35.48	22.99	9.20	259	Calderdale
-	-	-	203	30.55	23.94	19.43	7.55	297	Kirklees
-	-	-	160	34.24	28.55	20.13	7.87	276	Leeds
-	129	-	-	28.53	23.97	22.99	8.75	352	Wakefield

Local Authority	POPULATION & AREA			NUMBER OF HEREDITAMENTS				WASTE COLLECTED – BY WEIGHT				
											% OF TOTAL WASTE COLLECTED BY CONTRACTORS	
	Population at 30.6.83	Area	Density of population at 30.6.83	Domestic	Commercial	Industrial	Other	Total weight of all waste	Actual or estimated weight of all waste	Estimated % of waste weighed	Routine collections	Abnormal circumstances
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	'000	hectares	per hectare					tonnes		%	%	%
NON-MET DISTRICTS-ENGLAND												
AVON												
Bath	85.0	2,872	29.60	33,703	8,838	114	704	22,390	E	–	100	–
Bristol	399.3	10,954	36.45	153,069	27,602	599	2,257	117,850	E	97	–	–
Kingswood	85.9	4,789	17.94	31,558	3,500	120	304	19,304	A	100	–	–
Northavon	121.6	46,151	2.63	42,063	6,501	115	717	40,000	E	1	–	–
Wansdyke	77.5	32,335	2.40	28,765	5,139	133	739	24,960	E	11	–	–
Woodspring	166.6	37,468	4.45	63,713	10,296	258	1,303	52,100	E	72	–	–
BEDFORDSHIRE												
Luton	165.6	4,330	38.24	59,212	13,604	628	529	35,500	E	–	–	–
Mid Bedfordshire	105.8	30,351	2.10	37,373	7,351	283	774	35,000	E	40	35	–
North Bedfordshire	132.5	47,376	2.79	49,178	9,568	239	995	45,000	A	–	–	–
South Bedfordshire	109.0	21,203	5.14	38,962	8,761	232	558	40,000	E	–	–	–
BERKSHIRE												
Bracknell	88.2	10,941	8.06	31,838	11,215	121	362	17,650	A	100	**	–
Newbury	122.5	70,487	1.74	44,998	8,714	181	1,076	32,500	A	100	–	–
Reading	138.5	4,044	34.25	49,433	10,938	237	722	30,574	A	100	1	–
Slough	98.6	2,757	35.76	34,461	9,957	479	433	22,204	A	100	–	–
Windsor & Maidenhead	134.7	19,770	6.81	49,761	10,723	260	948	33,800	A	100	–	–
Wokingham	124.4	17,892	6.95	42,161	5,293	131	584	37,268	A	86	–	–
BUCKINGHAMSHIRE												
Aylesbury Vale	134.7	90,361	1.49	48,359	8,024	185	1,126	36,500	A	100	–	–
Chiltern	91.4	20,115	4.54	33,402	5,172	208	568	26,508	A	100	100	–
Milton Keynes	138.0	31,044	4.45	51,806	9,443	361	873	29,400	A	–	100	–
South Bucks	60.4	14,392	4.20	22,767	4,851	103	453	18,034	A	100	–	–
Wycombe	155.6	32,368	4.81	55,184	8,295	718	880	42,100	E	–	–	–
CAMBRIDGESHIRE												
Cambridge	100.4	4,071	24.66	37,241	8,137	119	1,036	30,500	E	65	–	–
East Cambridgeshire	54.3	65,500	0.83	21,631	3,274	100	612	16,250	E	**	–	–
Fenland	68.0	55,182	1.23	27,063	3,870	126	533	27,500	E	5	8	–
Huntingdon	127.8	92,431	1.38	46,856	8,250	255	1,042	44,000	E	–	–	–
Peterborough												
South Cambridgeshire	112.0	90,350	1.24	40,424	5,004	245	882	31,509	E	22	–	–
CHESHIRE												
Chester	115.0	44,803	2.57	43,944	5,892	87	1,122	35,000	E	–	–	–
Congleton	81.4	21,117	3.85	29,980	3,468	215	546	23,000	E	–	–	–
Crewe & Nantwich	97.5	43,071	2.26	38,376	4,115	146	769	29,980	E	75	–	–
Ellesmere Port & Neston												
Halton	122.6	7,390	16.59	44,442	6,308	272	617	32,679	A	100	–	–
Macclesfield	148.5	52,528	2.83	58,017	8,475	385	1,092	51,000	E	–	–	–
Vale Royal												
Warrington	174.2	17,615	9.89	64,637	6,564	400	844	50,000	A	100	–	–
CLEVELAND												
Hartlepool	93.4	9,428	9.91	34,663	4,379	229	580	30,030	E	71	–	–
Langbaurgh	149.4	24,033	6.22	55,925	6,827	129	1,132	46,210	E	78	–	–
Middlesbrough	148.6	5,394	27.55	53,719	5,833	139	711	80,274	E	85	–	–
Stockton-on-Tees	173.4	19,678	8.81	64,196	7,073	289	862	49,848	E	78	–	–
CORNWALL												
Caradon	69.3	66,407	1.04	28,833	4,765	106	826	35,950	E	–	–	–
Carrick												
Kerrier	84.9	47,312	1.79	33,408	5,140	214	723	33,500	E	–	–	–
North Cornwall	66.1	119,520	0.55	28,339	5,282	175	978	19,127	E	–	–	–
Penwith	53.9	30,322	1.78	24,375	5,105	144	722	24,350	E	–	–	–
Restormel	79.3	45,160	1.76	31,068	5,591	160	978	36,400	E	–	–	–
CUMBRIA												
Allerdale	95.4	125,729	0.76	37,412	5,951	173	1,133	34,000	E	20	–	–
Barrow-in-Furness	73.9	7,699	9.60	28,473	3,872	72	598	21,300	E	–	–	–
Carlisle	101.2	102,989	0.98	39,290	4,762	95	909	25,033	E	71	–	–
Copeland	72.5	73,732	0.98	26,831	5,284	88	671	26,920	E	–	–	–
Eden	43.6	215,814	0.20	17,564	2,819	96	1,064	15,141	E	2	–	–
South Lakeland	96.4	155,066	0.62	39,603	8,003	174	1,930	34,000	E	–	–	–
DERBYSHIRE												
Amber Valley	109.1	26,538	4.11	43,185	4,938	380	685	44,247	A	100	–	–
Bolsover	70.9	16,033	4.42	27,244	3,545	148	461	31,066	E	5	–	–
Chesterfield	96.9	6,582	14.72	38,878	5,537	265	524	29,200	E	**	**	–
Derby	214.9	7,803	27.54	83,312	9,244	324	1,086	33,022	A	100	–	–
Erewash	103.5	10,908	9.49	40,286	4,678	359	515	27,000	E	70	–	–
High Peak	82.1	54,079	1.52	31,256	5,346	300	778	23,103	A	100	–	–
North East Derbyshire	97.3	27,695	3.51	36,854	4,258	228	565	41,500	E	–	–	–
South Derbyshire	68.8	33,924	2.03	25,425	2,634	141	615	19,750	E	–	–	–
West Derbyshire	67.6	79,548	0.85	26,057	3,904	302	1,025	32,259	E	–	–	–

WASTE COLLECTED – BY TYPE			WASTE COLLECTED – BY METHOD OF STORAGE				METHODS OF COLLECTION						
							HOUSEHOLD WASTE						
Household waste (13)	Commercial waste (14)	Industrial waste (15)	Contained in dustbins (16)	Contained in disposable sacks (17)	Contained in bulk storage containers (18)	Other (19)	Backdoor collect & return (20)	Kerbside (21)	Other collect & return (22)	Skep (23)	Other normal methods (24)	Special collections (25)	Local Authority
%	%	%	%	%	%	%	%	%	%	%	%	%	
													NON-MET DISTRICTS-ENGLAND
													AVON
50	50	-	75	5	20	-	-	5	-	65	20	10	Bath
**	**	**	**	**	**	**	-	62	11	13	8	6	Bristol
86	7	7	55	38	7	-	88	-	-	-	7	5	Kingswood
95	5	-	67	30	3	-	-	95	5	-	-	-	Northavon
94	6	-	89	1	10	-	-	-	-	94	1	5	Wansdyke
88	10	2	63	5	32	-	-	38	6	51	-	5	Woodspring
													BEDFORDSHIRE
85	13	2	65	10	20	5	70	-	-	-	20	10	Luton
92	8	-	-	100	-	-	80	20	-	-	-	-	Mid Bedfordshire
82	18	-	6	76	12	6	90	-	-	-	-	-	North Bedfordshire
96	4		-	98	2	-	100	-	-	-	-	-	South Bedfordshire
													BERKSHIRE
98	2	-	-	98	-	2	100	-	-	-	-	-	Bracknell
98	2	-	30	63	5	2	63	35	-	-	-	2	Newbury
85	15	-	90	-	10	-	5	10	79	-	5	1	Reading
80	15	5	-	80	20	-	72	-	-	-	20	8	Slough
75	15	10	65	20	10	5	100	-	-	-	-	-	Windsor & Maidenhead
90	10	-	60	32	8	-	-	-	98	-	-	2	Wokingham
													BUCKINGHAMSHIRE
80	20	-	-	95	5	-	98	2	-	-	-	-	Aylesbury Vale
80	13	7	37	45	18	-	49	-	1	46	2	2	Chiltern
100	-	-	-	99	1	-	100	-	-	-	-	-	Milton Keynes
80	20	-	2	85	13	-	99	-	-	-	-	1	South Bucks
87	13	-	-	87	13	-	100	-	-	-	-	-	Wycombe
													CAMBRIDGESHIRE
70	25	5	44	22	20	14	82	8	-	-	5	5	Cambridge
90	10	-	5	85	-	10	72	28	-	-	-	-	East Cambridgeshire
87	12	1	-	75	10	15	83	-	-	-	-	17	Fenland
94	6	-	-	100	-	-	100	-	-	-	-	-	Huntingdon
													Peterborough
92	8		-	97	3	-	-	100	-	-	-	-	South Cambridgeshire
													CHESHIRE
85	15	-	3	82	12	3	100	-	-	-	-	-	Chester
87	13	-	-	84	13	3	97	-	-	-	-	3	Congleton
90	10	-	-	94	6	-	95	-	-	-	-	5	Crewe & Nantwich
													Ellesmere Port & Neston
88	12	-	64	22	12	2	98	-	-	-	-	2	Halton
88	12	-	-	95	5	-	95	-	-	-	-	5	Macclesfield
													Vale Royal
95	5	-	-	95	5	-	88	-	-	-	2	10	Warrington
													CLEVELAND
87	13	-	-	75	25	-	96	-	-	-	-	4	Hartlepool
79	21	-	60	20	8	12	93	-	-	-	-	7	Langbaurgh
81	19	-	69	-	20	11	73	-	16	-	-	11	Middlesbrough
90	10	-	-	90	10	-	100	-	-	-	-	-	Stockton-on-Tees
													CORNWALL
80	10	10	50	30	5	15	5	75	5	-	-	15	Caradon
													Carrick
85	12	3	76		6	18	6	90	2	-	-	2	Kerrier
75	20	5	90	8	2	-	-	85	-	-	-	15	North Cornwall
80	20	-	70	25	5	-	74	25	-	-	-	1	Penwith
65	35	-	66	32	2	-	31	67	-	-	-	2	Restormel
													CUMBRIA
95	5	-	33	57	-	10	47	43	-	-	-	10	Allerdale
92	8	-	69	26	-	5	100	-	-	-	-	-	Barrow-in-Furness
89	11	-	84	-	8	8	10	90	-	-	-	-	Carlisle
93	7	-	-	95	-	5	80	8	12	-	-	-	Copeland
83	17	-	25	70	-	5	35	65	-	-	-	*	Eden
73	27	-	87		5	8	90	-	-	10	-	-	South Lakeland
													DERBYSHIRE
90	8	2	3	95	2	-	99	-	-	-	-	1	Amber Valley
94	6	-	74	1	14	11	77	-	-	-	13	10	Bolsover
85	10	5	87	1	12	-	94	1	-	-	5	-	Chesterfield
80	15	5	75	-	25	-	-	-	-	100	-	-	Derby
86	11	3	92		8	-	100	-	-	-	-	-	Erewash
86	12	2	-	87	11	2	98	-	-	-	-	2	High Peak
90	10	-	1	84	10	5	90	-	-	-	-	10	North East Derbyshire
97	3	-	3	93	-	4	99	-	-	-	-	1	South Derbyshire
82	12	6	-	70	23	7	100	-	-	-	-	-	West Derbyshire

WASTE COLLECTION STATISTICS

Local Authority	METHODS OF COLLECTION: COMMERCIAL WASTE: Backdoor collect & return (26)	Kerbside (27)	Other collect & return (28)	Skep (29)	Other normal methods (30)	Special collections (31)	Collection system (See Notes) (32)	NUMBER OF DISPOSABLE SACKS USED: Paper (33)	Plastic (34)
	%	%	%	%	%	%		'000	'000
NON-MET DISTRICTS-ENGLAND									
AVON									
Bath	75	5	-	-	20	-	**	-	-
Bristol	**	**	**	**	**	**	B	-	**
Kingswood	93	-	-	-	7	-	T	-	10
Northavon	-	60	-	36	2	2	C	-	300
Wansdyke	38	-	-	-	61	1	T	-	23
Woodspring	-	26	4	70	-	-	T	-	700
BEDFORDSHIRE									
Luton	95	-	-	-	5	-	T	-	800
Mid Bedfordshire	80	20	-	-	-	-	T	-	3,000
North Bedfordshire	65	5	-	-	30	-	T	-	4,000
South Bedfordshire	100	-	-	-	-	-	T	-	3,100
BERKSHIRE									
Bracknell	75	-	-	-	-	25	C	-	2,036
Newbury	-	100	-	-	-	-	T	-	2,650
Reading	-	90	5	-	5	-	T	-	-
Slough	-	-	-	-	90	10	T	-	2,400
Windsor & Maidenhead	100	-	-	-	-	-	T	-	2,527
Wokingham	100	-	-	-	-	-	B	-	-
BUCKINGHAMSHIRE									
Aylesbury Vale	-	75	-	-	20	5	T	-	2,800
Chiltern	28	-	16	-	55	1	**	-	1,768
Milton Keynes	**	**	**	**	**	**	**	-	2,950
South Bucks	100	-	-	-	-	-	T	-	2,200
Wycombe	100	-	-	-	-	-	T	-	3,574
CAMBRIDGESHIRE									
Cambridge	62	28	-	-	10	-	T	-	-
East Cambridgeshire	85	15	-	-	-	-	T	-	1,430
Fenland	-	-	-	-	100	-	T	2	2,020
Huntingdon	100	-	-	-	-	-	T	-	2,775
Peterborough									
South Cambridgeshire	-	62	-	-	38	-	T	-	3,093
CHESHIRE									
Chester	78	22	-	-	-	-	C	-	3,925
Congleton	25	-	-	-	75	-	T	-	2,400
Crewe & Nantwich	100	-	-	-	-	-	T	-	2,716
Ellesmere Port & Neston									
Halton	100	-	-	-	-	-	B	-	1,300
Macclesfield	60	-	-	-	40	-	T	-	4,880
Vale Royal									
Warrington	75	-	-	-	20	5	T	-	6,000
CLEVELAND									
Hartlepool	45	-	-	55	-	-	T	21	1,568
Langbaurgh	100	-	-	-	-	-	T	832	216
Middlesbrough	100	-	-	-	-	-	T	-	-
Stockton-on-Tees	100	-	-	-	-	-	T	5	4,588
CORNWALL									
Caradon	-	80	-	20	-	-	T	-	90
Carrick									
Kerrier	10	87	1	-	-	2	T	-	60
North Cornwall	18	57	5	-	20	-	T	-	100
Penwith	74	25	-	1	-	-	C	-	281
Restormel	35	55	-	10	-	-	T	-	866
CUMBRIA									
Allerdale	60	40	-	-	-	-	T	-	2,100
Barrow-in-Furness	100	-	-	-	-	-	C	-	589
Carlisle	-	100	-	-	-	-	T	-	32
Copeland	80	10	-	-	-	10	T	-	2,164
Eden	60	40	-	-	-	-	T	-	815
South Lakeland	100	-	-	-	-	-	T	37	153
DERBYSHIRE									
Amber Valley	100	-	-	-	-	-	T	-	3,000
Bolsover	42	-	-	-	32	26	T	-	26
Chesterfield	37	3	-	-	60	-	B	-	58
Derby	-	-	-	40	60	-	T	-	2
Erewash	60	-	-	-	40	-	B	-	70
High Peak	16	-	-	-	83	1	T	-	2,400
North East Derbyshire	80	-	-	-	-	20	T	-	3,000
South Derbyshire	99	-	-	-	-	1	T	-	1,665
West Derbyshire	100	-	-	-	-	-	T	-	1,800

NUMBER OF BULK STORAGE CONTAINERS		PROVISION OF DUSTBINS/ SACKHOLDERS		FREQUENCY OF COLLECTION PER WEEK						
				NORMAL HOUSEHOLD WASTE			COMMERCIAL WASTE			
With compaction (35)	Without compaction (36)	Charge (See Notes) (37)	Number (38)	Twice or more (39)	Once (40)	Less than once (41)	Twice or more (42)	Once (43)	Less than once (44)	Local Authority
				%	%	%	%	%	%	
										NON-MET DISTRICTS-ENGLAND
										AVON
-	353	**	-	-	100	-	15	75	10	Bath
3	3,450	N	-	-	100	-	20	80	-	Bristol
-	213	N	30	-	100	-	2	98	-	Kingswood
-	138	N	-	-	99	1	1	99	-	Northavon
-	210	N	-	-	100	-	-	100	-	Wansdyke
-	680	N	-	-	100	-	8	92	-	Woodspring
										BEDFORDSHIRE
-	1,170	F	100	-	100	-	5	95	-	Luton
-	-	N	-	-	100	-	-	100	-	Mid Bedfordshire
-	1,060	C	429	-	100	-	30	70	-	North Bedfordshire
250	-	C	200	-	100	-	1	99	-	South Bedfordshire
										BERKSHIRE
-	-	C	**	-	100	-	-	100	-	Bracknell
-	-	C	-	1	99	-	1	99	-	Newbury
-	700	N	20	5	95	-	25	75	-	Reading
-	1,300	N	-	2	98	-	8	92	-	Slough
-	908	C	34	-	100	-	5	94	1	Windsor & Maidenhead
2	433	N	25	-	100	-	1	94	5	Wokingham
										BUCKINGHAMSHIRE
-	879	N	-	-	100	-	1	99	-	Aylesbury Vale
-	900	N	-	-	100	-	-	100	-	Chiltern
-	-	N	-	-	100	-	##	##	##	Milton Keynes
-	509	F	344	-	100	-	15	85	-	South Bucks
-	877	N	-	-	100	-	10	90	-	Wycombe
										CAMBRIDGESHIRE
2,000	-	N	-	2	98	-	15	85	-	Cambridge
-	-	N	-	-	99	1	8	92	-	East Cambridgeshire
-	8	N	-	-	100	-	-	90	10	Fenland
-	-	N	-	-	100	-	-	100	-	Huntingdon
-	127	N	-	-	100	-	-	100	-	Peterborough South Cambridgeshire
										CHESHIRE
-	693	C	487	-	100	-	80	20	-	Chester
-	280	C	300	-	100	-	-	100	-	Congleton
-	476	C	138	-	90	10	2	98	-	Crewe & Nantwich
-	420	F	950	-	100	-	5	95	-	Ellesmere Port & Neston Halton
-	1,400	C	400	-	100	-	25	75	-	Macclesfield
-	500	C	1,500	-	100	-	20	80	-	Vale Royal Warrington
										CLEVELAND
-	165	N	-	-	100	-	30	70	-	Hartlepool
-	1,039	C	-	-	100	-	42	57	1	Langbaurgh
2	1,084	C	-	-	100	-	35	60	5	Middlesbrough
788	11	N	-	-	100	-	1	98	1	Stockton-on-Tees
										CORNWALL
-	70	N	-	-	100	-	5	95	-	Caradon
-	358	N	-	-	100	-	90	10	-	Carrick Kerrier
-	66	N	-	-	100	-	30	70	-	North Cornwall
-	30	N	-	-	100	-	30	70	-	Penwith
-	28	N	8	-	100	-	80	20	-	Restormel
										CUMBRIA
-	35	C	350	-	100	-	80	20	-	Allerdale
-	-	F	2,500	-	100	-	-	100	-	Barrow-in-Furness
-	300	F	2,688	-	100	-	96	4	-	Carlisle
-	-	F	1,500	-	98	2	80	20	-	Copeland
-	-	N	-	-	99	1	-	100	-	Eden
-	13	N	-	-	76	24	10	89	1	South Lakeland
										DERBYSHIRE
-	97	N	-	-	100	-	10	90	-	Amber Valley
-	10	F	1,313	-	100	-	-	100	-	Bolsover
-	380	C	2,375	-	100	-	30	70	-	Chesterfield
-	500	N	-	-	100	-	-	100	-	Derby
-	115	F	2,500	-	100	-	20	80	-	Erewash
-	280	N	-	-	100	-	10	90	-	High Peak
-	164	C	400	-	100	-	-	100	-	North East Derbyshire
-	-	C	244	-	100	-	-	100	-	South Derbyshire
1	65	N	-	-	100	-	-	100	-	West Derbyshire

Local Authority	NUMBER OF BOTTLE BANKS		WASTE OIL COLLECTION POINTS		AMOUNT OF WASTE				
	Owned & operated by the local authority (45)	Other (46)	Owned & operated by the local authority (47)	Other (e.g. garages) (48)	Paper (49)	Abandoned Vehicles (50)	Glass (51)	Oil (52)	Ferrous Metals (53)
					tonnes	no.	tonnes	'000 litres	tonnes
NON-MET DISTRICTS-ENGLAND									
AVON									
Bath	-	-	1	-	-	57	-	1	-
Bristol	-	-	3	-	-	584	-	-	-
Kingswood	5	-	-	-	-	40	422	-	-
Northavon	-	-	-	-	-	25	-	-	-
Wansdyke	-	-	-	-	-	-	-	-	-
Woodspring	-	-	2	-	1,237	400	-	2	-
BEDFORDSHIRE									
Luton	5	-	-	-	1,256	1,347	56	-	-
Mid Bedfordshire	-	1	-	1	-	327	-	-	-
North Bedfordshire	8	-	-	-	-	121	600	-	-
South Bedfordshire	-	26	-	-	-	-	360	-	-
BERKSHIRE									
Bracknell	5	10	-	-	-	328	1,044	-	-
Newbury	-	9	-	-	-	249	340	-	-
Reading	8	3	2	-	672	239	1,000	5	52
Slough	-	-	-	-	-	130	-	-	-
Windsor & Maidenhead	7	6	1	-	-	-	404	15	-
Wokingham	4	2	-	-	-	117	344	-	2
BUCKINGHAMSHIRE									
Aylesbury Vale	25	-	-	-	1,650	250	240	-	-
Chiltern	-	7	1	-	-	232	350	1	-
Milton Keynes	-	20	-	-	-	275	-	-	-
South Bucks	-	5	-	-	-	135	-	-	-
Wycombe	-	33	-	-	-	307	500	-	-
CAMBRIDGESHIRE									
Cambridge	-	34	-	-	-	60	900	-	-
East Cambridgeshire	-	2	-	-	-	25	19	-	20
Fenland	-	5	2	2	-	9	160	1	-
Huntingdon	-	-	1	-	-	85	-	2	-
Peterborough									
South Cambridgeshire	-	-	-	-	-	27	-	-	-
CHESHIRE									
Chester	5	-	-	-	-	-	600	-	-
Congleton	-	-	-	-	-	-	-	-	-
Crewe & Nantwich	-	-	-	-	-	-	-	-	-
Ellesmere Port & Neston									
Halton	-	-	-	-	-	17	-	-	-
Macclesfield	-	-	-	-	-	168	-	-	-
Vale Royal									
Warrington	33	-	-	-	-	30	381	-	-
CLEVELAND									
Hartlepool	1	-	-	-	-	-	25	-	5
Langbaurgh	-	-	-	-	-	183	-	-	-
Middlesbrough	-	36	-	-	-	158	35	-	1
Stockton-on-Tees	-	-	-	1	-	38	-	-	109
CORNWALL									
Caradon	-	-	-	-	-	82	-	-	-
Carrick									
Kerrier	-	-	-	**	-	75	-	-	-
North Cornwall	-	-	-	-	-	30	-	-	-
Penwith	-	-	-	-	-	-	-	-	-
Restormel	4	-	2	-	-	3	203	3	-
CUMBRIA									
Allerdale	-	-	-	**	-	52	-	-	-
Barrow-in-Furness	-	-	-	-	-	-	-	-	-
Carlisle	3	-	1	-	1,880	120	114	-	-
Copeland	-	-	-	2	-	15	-	-	-
Eden	-	1	-	-	-	7	75	-	-
South Lakeland	-	4	-	**	-	30	-	-	-
DERBYSHIRE									
Amber Valley	-	-	-	-	-	15	-	-	-
Bolsover	-	-	-	-	301	4	-	-	5
Chesterfield	4	-	-	-	-	10	147	-	-
Derby	-	-	-	-	-	341	-	-	-
Erewash	-	-	-	-	-	8	-	-	-
High Peak	-	-	-	-	-	110	-	-	-
North East Derbyshire	-	-	-	-	-	11	-	-	-
South Derbyshire	-	-	-	-	-	14	-	-	-
West Derbyshire	-	6	-	-	400	10	20	-	-

RECLAIMED		NUMBER OF LOCAL AUTHORITY'S COLLECTION VEHICLES				NUMBER OF CONTRACTORS' COLLECTION VEHICLES				
		SPECIALIST				SPECIALIST				
Non-Ferrous Metals (54)	Other (55)	With compaction (56)	Without compaction (57)	General purpose (58)	Total (59)	With compaction (60)	Without compaction (61)	General purpose (62)	Total (63)	Local Authority
tonnes	tonnes									
										NON-MET DISTRICTS-ENGLAND
										AVON
-	-	##	##	##	##	10	5	-	15	Bath
-	-	58	-	5	63	-	-	-	-	Bristol
-	-	8	-	1	9	-	-	-	-	Kingswood
-	-	15	2	1	18	-	-	-	-	Northavon
-	-	9	-	1	10	-	-	-	-	Wansdyke
-	-	22	-	5	27	-	-	-	-	Woodspring
										BEDFORDSHIRE
-	-	28	8	1	37	-	-	-	-	Luton
-	-	7	-	2	9	7	-	2	9	Mid Bedfordshire
-	-	16	2	-	18	-	-	-	-	North Bedfordshire
-	-	15	-	5	20	-	-	-	-	South Bedfordshire
										BERKSHIRE
-	-	8	-	1	9	**	**	**	**	Bracknell
-	-	15	2	3	20	-	-	-	-	Newbury
-	-	16	-	-	16	-	-	-	-	Reading
-	-	11	-	3	14	-	-	-	-	Slough
-	-	15	-	4	19	-	-	-	-	Windsor & Maidenhead
-	-	12	2	1	15	-	-	-	-	Wokingham
										BUCKINGHAMSHIRE
-	-	20	1	2	23	-	-	-	-	Aylesbury Vale
-	-	##	##	##	##	9	-	2	11	Chiltern
-	-	##	##	##	##	10	-	1	11	Milton Keynes
-	-	11	-	1	12	-	-	-	-	South Bucks
-	-	20	-	4	24	-	-	-	-	Wycombe
										CAMBRIDGESHIRE
-	-	17	-	1	18	-	-	-	-	Cambridge
-	-	9	-	-	9	-	-	-	-	East Cambridgeshire
-	-	9	1	1	11	**	**	**	**	Fenland
-	-	17	1	3	21	-	-	-	-	Huntingdon
										Peterborough
-	-	13	-	3	16	-	-	-	-	South Cambridgeshire
										CHESHIRE
-	-	22	-	-	22	-	-	-	-	Chester
-	-	15	-	2	17	-	-	-	-	Congleton
-	-	15	1	2	18	-	-	-	-	Crewe & Nantwich
										Ellesmere Port & Neston
-	-	21	-	-	21	-	-	-	-	Halton
-	-	27	5	-	32	-	-	-	-	Macclesfield
										Vale Royal
-	-	31	2	1	34	-	-	-	-	Warrington
										CLEVELAND
-	-	13	-	2	15	-	-	-	-	Hartlepool
-	-	24	-	3	27	-	-	-	-	Langbaurgh
-	-	26	5	3	34	-	-	-	-	Middlesbrough
-	-	17	1	-	18	-	-	-	-	Stockton-on-Tees
										CORNWALL
-	-	14	1	-	15	-	-	-	-	Caradon
										Carrick
-	-	19	1	2	22	-	-	-	-	Kerrier
-	-	14	1	-	15	-	-	-	-	North Cornwall
-	-	18	3	1	22	-	-	-	-	Penwith
-	-	17	-	4	21	-	-	-	-	Restormel
										CUMBRIA
-	-	18	-	-	18	-	-	-	-	Allerdale
-	-	16	-	-	16	-	-	-	-	Barrow-in-Furness
-	-	17	-	2	19	-	-	-	-	Carlisle
-	-	13	-	1	14	-	-	-	-	Copeland
-	-	10	-	-	10	-	-	-	-	Eden
-	-	28	1	-	29	-	-	-	-	South Lakeland
										DERBYSHIRE
-	-	17	-	1	18	-	-	-	-	Amber Valley
-	-	11	-	3	14	-	-	-	-	Bolsover
-	-	19	-	1	20	-	-	-	-	Chesterfield
-	-	33	-	3	36	-	-	-	-	Derby
-	-	20	-	2	22	-	-	-	-	Erewash
-	-	15	-	-	15	-	-	-	-	High Peak
-	-	18	3	4	25	-	-	-	-	North East Derbyshire
-	-	11	-	-	11	-	-	-	-	South Derbyshire
-	-	18	5	1	24	-	-	-	-	West Derbyshire

Local Authority	LOCAL AUTHORITY STAFF EMPLOYED AT 31.3.84								EXPENDITURE			
	Drivers (64)	Loaders (65)	Drivers/ Loaders (66)	Other manual (67)	Vehicle maintenance (68)	Technical & administrative (69)	Total (70)	Contractors' manual employees (71)	Employees (72)	Premises/ depots (73)	Provision of disposable sacks (74)	Provision of dustbins (75)
	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	£	£	£	£
NON-MET DISTRICTS-ENGLAND												
AVON												
Bath	**	**	**	**	**	**	**	39	160,688	73	40	26
Bristol	52	188	44	-	-	11	295	-	3,124,332	97,421	22,060	-
Kingswood	8	28	2	-	1	1	40	-	328,035	16,353	611	167
Northavon	16	25	10	-	2	2	55	-	452,491	25,471	14,371	
Wansdyke	10	30	-	-	-	2	42	-	424,195	3,250	2,586	176
Woodspring	22	35	-	4	3	3	87	-	713,690	42,500	-	-
BEDFORDSHIRE												
Luton	20	85	6	3	16	11	141	-	855,092	67,886	30,420	2,873
Mid Bedfordshire	-	17	7	-	-	3	27	21	244,155	24,313	120,218	-
North Bedfordshire	15	46	-	14	3	4	82	-	589,861	20,860	109,116	15,807
South Bedfordshire	23	28	-	-	3	5	59	-	473,663	37,517	107,981	-
BERKSHIRE												
Bracknell	7	23	-	-	-	1	31	**	304,132	-	35,721	-
Newbury	-	35	20	2	5	4	66	-	459,553	17,438	120,355	-
Reading	13	52	4	2	5	8	84	-	712,388	9,945	2,412	-
Slough	8	28	1	-	5	4	46	-	462,713	8,524	94,631	-
Windsor & Maidenhead	15	68	-	-	3	3	89	-	748,229	20,317	104,338	-
Wokingham	16	28	-	-	2	3	49	-	430,348	33,624	-	-
BUCKINGHAMSHIRE												
Aylesbury Vale	-	62	17	3	7	6	97	-	558,341	59,141	60,072	-
Chiltern	**	**	**	**	**	3	3	46	37,429	11,095	-	-
Milton Keynes	**	**	**	**	**	3	3	48	22,231	-	4,221	1,231
South Bucks	-	19	8	-	3	5	35	-	324,923	16,987	56,375	6,339
Wycombe	17	64	6	-	5	3	95	-	929,942	9,192	116,510	-
CAMBRIDGESHIRE												
Cambridge	16	48	-	-	3	1	68	-	469,319	12,400	-	-
East Cambridgeshire	-	17	8	-	-	2	27	-	222,700	6,783	45,000	-
Fenland	8	18	-	-	1	1	28	**	238,053	22,264	57,899	-
Huntingdon	15	39	-	-	1	3	58	-	401,080	16,518	115,647	-
Peterborough												
South Cambridgeshire	9	27	-	-	4	2	42	-	291,503	7,110	95,919	-
CHESHIRE												
Chester	17	54	6	-	8	1	86	-	571,947	39,965	131,929	35,554
Congleton	-	32	18	-	-	3	53	-	397,855	23,086	57,700	403
Crewe & Nantwich	14	51	3	-	5	3	76	-	594,997	12,070	109,917	763
Ellesmere Port & Neston												
Halton	19	68	-	-	7	3	97	-	832,590	36,361	35,738	12,935
Macclesfield	17	71	16	-	6	8	118	-	878,129	30,159	154,944	-
Vale Royal												
Warrington	25	103	11	-	9	10	158	-	1,138,289	64,535	139,596	5,104
CLEVELAND												
Hartlepool	8	27	-	-	5	6	46	-	524,145	162	54,466	-
Langbaurgh	25	78	-	-	7	8	118	-	977,757	20,806	75,131	5,835
Middlesbrough	15	77	14	-	8	4	118	-	805,247	27,349	-	-
Stockton-on-Tees	-	59	22	-	6	5	92	-	702,613	36,593	185,906	-
CORNWALL												
Caradon	11	22	6	-	-	6	45	-	313,927	31,729	11,121	-
Carrick												
Kerrier	18	30	2	-	3	2	55	-	425,667	27,221	3,047	-
North Cornwall	-	17	10	-	3	3	33	-	259,588	11,782	2,785	298
Penwith	-	28	14	-	-	3	45	-	308,754	2,250	8,904	-
Restormel	-	30	15	-	2	4	51	-	453,984	7,695	38,961	-
CUMBRIA												
Allerdale	-	36	19	-	3	2	60	-	423,990	19,100	66,000	3,500
Barrow-in-Furness	10	42	3	-	4	5	64	-	422,609	12,133	12,583	10,225
Carlisle	12	44	6	3	4	4	73	-	537,688	34,986	1,188	12,640
Copeland	12	39	-	-	2	3	56	-	390,504	11,478	80,031	5,772
Eden	-	14	10	-	2	1	27	-	180,730	1,947	28,405	-
South Lakeland	2	50	21	-	2	3	78	-	759,519	54,494	5,722	-
DERBYSHIRE												
Amber Valley	-	52	17	-	-	2	71	-	558,923	19,548	80,048	-
Bolsover	7	37	1	3	2	2	52	-	476,724	15,568	793	6,833
Chesterfield	2	59	16	-	-	8	85	-	542,854	23,340	1,301	-
Derby	35	126	-	-	3	4	168	-	1,244,666	111,602	8,384	-
Erewash	-	54	18	-	3	6	81	-	619,683	34,442	2,678	9,576
High Peak	13	34	-	-	2	3	52	-	452,542	4,623	95,360	-
North East Derbyshire	25	56	-	2	3	6	92	-	656,157	48,563	115,122	-
South Derbyshire	-	26	8	-	2	1	37	-	291,981	16,044	44,676	2,109
West Derbyshire	4	26	22	-	2	5	59	-	451,401	13,565	51,336	-

EXPENDITURE						INCOME			
			AGENCY SERVICES			COLLECTION SERVICES			
Transport & moveable plant (76)	Establishment expenses (77)	Other running expenses (78)	Other local authorities (79)	Contractors (80)	Gross Expenditure (81)	Commercial waste (82)	Bulky household waste (83)	Other (84)	Local Authority
£	£	£	£	£	£	£	£	£	
									NON-MET DISTRICTS-ENGLAND
									AVON
-18.049	73.008	1.412	-	355.367	572.565	13.660	811	-	Bath
1.172.686	57.168	97.106	-	-	4.570.773	563.778	19.026	78.407	Bristol
90.697	9.612	6.207	11.408	-	463.090	38.068	1.169	43	Kingswood
281.071	57.929	8.569	24.031	-	863.953	68.494	1.457	23.755	Northavon
181.045	27.102	27.066	14.416	-	679.836	52.142	-	108	Wansdyke
342.227	167.648	31.360	50.280	-	1.347.705	122.560	2.077	2.212	Woodspring
									BEDFORDSHIRE
533.846	254.468	19.973	-	-	1.764.558	90.325	4.039	2.716	Luton
124.695	7.092	18.520	-	275.397	814.390	-	19.694	-	Mid Bedfordshire
258.928	57.259	38.107	-	-	1.089.938	125.011	-	1.865	North Bedfordshire
210.697	57.137	3.116	-	-	890.111	40.475	42.160	3.947	South Bedfordshire
									BERKSHIRE
115.360	12.408	4.234	-	20.984	513.059	12.859	1.299	-	Bracknell
286.040	132.100	13.495	-	-	1.028.981	39.067	-	-	Newbury
217.075	139.173	55.419	-	-	1.136.412	91.771	2.406	8.309	Reading
214.277	51.247	18.926	-	-	850.318	67.934	-	220	Slough
404.153	119.019	17.002	-	-	1.413.058	118.864	-	141	Windsor & Maidenhead
179.684	63.361	16.499	-	-	743.516	50.186	1.921	23.372	Wokingham
									BUCKINGHAMSHIRE
329.057	84.580	-	-	-	1.091.191	107.696	4.028	37.731	Aylesbury Vale
2.468	3.312	9.539	-	590.432	656.275	-	2.062	3.999	Chiltern
15.653	-	636	-	647.289	691.281	-	-	-	Milton Keynes
129.922	74.765	3.138	7.854	-	620.303	52.361	179	8.099	South Bucks
304.391	27.842	6.757	-	-	1.394.634	112.001	-	-	Wycombe
									CAMBRIDGESHIRE
176.336	30.411	6.642	-	-	695.108	73.014	132	-	Cambridge
103.450	9.611	152	4.478	-	394.174	23.168	-	-	East Cambridgeshire
130.806	18.318	2.347	2.215	5.514	477.616	12.640	-	3.230	Fenland
187.662	74.597	15.423	-	-	810.927	43.968	2.531	-	Huntingdon
236.188	89.493	3.598	21.997	-	745.808	14.982	-	-	Peterborough South Cambridgeshire
									CHESHIRE
320.345	57.350	7.412	-	-	1.164.502	79.580	-	238	Chester
177.246	55.358	7.947	-	-	719.595	21.338	-	21.648	Congleton
167.444	33.542	2.920	-	-	921.653	44.938	1.456	12.159	Crewe & Nantwich
268.937	39.527	12.324	-	-	1.238.412	67.892	-	-	Ellesmere Port & Neston Halton
256.598	111.621	7.268	7.200	125	1.446.044	112.457	-	7.698	Macclesfield
285.923	73.347	19.379	-	-	1.726.173	114.053	2.038	-	Vale Royal Warrington
									CLEVELAND
255.448	76.240	850	28.908	22.496	962.715	62.057	-	-	Hartlepool
393.693	3.801	4.766	34.347	-	1.318.136	162.482	1.886	44.686	Langbaurgh
520.491	31.971	26.947	64.266	-	1.476.271	248.200	22.178	48.787	Middlesbrough
256.536	3.207	24.757	40.953	-	1.250.565	227.725	-	21.799	Stockton-on-Tees
									CORNWALL
164.773	7.448	554	15.350	-	544.902	32.472	-	-	Caradon
230.333	27.765	1.037	16.580	-	731.650	33.930	362	9.308	Carrick
144.399	30.307	4.993	16.880	-	471.032	23.671	3.373	7.742	Kerrier
136.307	38.910	14.569	16.370	-	526.064	34.655	-	13.530	North Cornwall
180.950	13.828	5.284	17.700	639	719.041	101.939	3.068	4.707	Penwith Restormel
									CUMBRIA
295.000	32.380	4.200	-	-	844.170	20.000	-	1.640	Allerdale
156.096	61.376	13.741	-	-	688.763	18.349	2.178	68	Barrow-in-Furness
255.792	-	11.262	-	-	853.556	64.636	350	277	Carlisle
161.874	61.210	4.719	-	-	715.588	25.047	-	1.241	Copeland
109.936	174	1.118	-	-	322.330	16.484	-	4.076	Eden
278.599	26.210	11.150	-	-	1.135.694	57.058	-	633	South Lakeland
									DERBYSHIRE
222.133	57.245	5.310	-	-	943.207	19.466	181	-	Amber Valley
138.386	24.738	3.955	-	-	666.997	14.915	-	-	Bolsover
218.345	85.083	7.208	-	-	878.131	54.571	-	29.193	Chesterfield
479.166	65.620	26.660	-	-	1.936.098	100.446	4.652	9.019	Derby
232.688	78.185	221	-	-	977.473	49.707	253	-	Erewash
195.228	22.054	6.159	27.615	-	803.581	42.630	4.476	6.688	High Peak
250.309	25.952	-	-	-	1.096.103	15.192	-	12.874	North East Derbyshire
129.130	23.487	414	-	-	507.841	13.157	-	4.381	South Derbyshire
151.802	56.482	7.975	-	-	732.561	35.575	-	37.187	West Derbyshire

Local Authority	INCOME										
	SALES OF RECLAIMED WASTE							CONTRIBUTIONS FROM OTHER AUTHORITIES			
	Paper (85)	Abandoned Vehicles (86)	Glass (87)	Oil (88)	Ferrous Metals (89)	Non-Ferrous Metals (90)	Other (91)	Waste Disposal Authority (92)	Other local authorities (93)	Total Income (94)	Total Net Expenditure (95)
	£	£	£	£	£	£	£	£	£	£	£
NON-MET DISTRICTS-ENGLAND											
AVON											
Bath	-	1,604	-	146	484	484	25	-	-	17,214	555,351
Bristol	2,015	-	-	-	-	-	2,912	-	-	662,138	3,908,635
Kingswood	-	310	-	-	-	-	-	-	-	39,590	423,500
Northavon	-	715	-	-	-	-	-	-	-	96,421	767,532
Wansdyke	-	-	-	-	-	-	-	-	-	52,250	627,586
Woodspring	24,742	2,521	-	-	-	-	-	93,918	-	250,030	1,097,679
BEDFORDSHIRE											
Luton	26,977	1,863	-	-	-	-	-	-	-	123,920	1,638,638
Mid Bedfordshire	-	-	-	-	-	-	-	-	250	19,944	794,446
North Bedfordshire	-	-	14,202	-	-	-	-	-	-	141,078	948,860
South Bedfordshire	-	-	35	-	-	-	777	-	-	87,394	802,717
BERKSHIRE											
Bracknell	-	-	8,122	-	-	-	-	-	-	22,280	490,779
Newbury	-	-	317	-	-	-	-	-	-	39,384	989,597
Reading	8,699	-	18,748	-	525	-	-	-	-	130,658	1,005,754
Slough	-	-	-	-	-	-	-	-	-	68,134	782,164
Windsor & Maidenhead	-	370	4,462	-	-	-	-	73,880	-	197,717	1,215,341
Wokingham	-	924	3,938	**	-	-	1,895	-	-	84,236	659,280
BUCKINGHAMSHIRE											
Aylesbury Vale	31,482	-	312	-	-	-	-	18,675	-	199,924	891,267
Chiltern	-	2,586	700	60	-	-	-	-	-	9,407	646,868
Milton Keynes	-	-	-	-	-	-	-	-	-	-	691,281
South Bucks	-	-	-	-	-	-	-	-	-	60,639	559,664
Wycombe	-	-	714	-	-	-	-	-	744	113,459	1,281,175
CAMBRIDGESHIRE											
Cambridge	-	-	-	-	-	-	-	-	-	73,146	621,962
East Cambridgeshire	-	-	-	-	167	-	199	15,250	-	38,784	355,390
Fenland	-	-	-	-	-	-	-	18,513	-	34,383	443,233
Huntingdon	-	-	-	-	-	-	1,207	-	185	47,891	763,036
Peterborough											
South Cambridgeshire	-	20	-	-	-	-	-	-	-	15,002	730,806
CHESHIRE											
Chester	-	-	6,586	-	-	-	-	-	-	86,404	1,078,098
Congleton	-	-	-	-	-	-	-	2,970	-	45,956	673,639
Crewe & Nantwich	-	-	-	-	-	-	-	-	-	58,573	863,080
Ellesmere Port & Neston											
Halton	-	-	-	-	-	-	-	33,532	1,140	102,364	1,135,848
Macclesfield	-	1,415	-	-	-	-	-	-	-	121,570	1,324,474
Vale Royal											
Warrington	-	-	186	-	-	-	-	5,415	-	121,692	1,604,481
CLEVELAND											
Hartlepool	-	-	-	-	-	-	1,676	38,019	-	101,752	860,963
Langbaurgh	-	1,918	-	-	-	-	-	18,681	-	229,653	1,288,483
Middlesbrough	-	1,729	-	-	-	-	-	-	-	320,894	1,155,377
Stockton-on-Tees	-	-	-	-	-	-	-	-	-	249,524	1,001,041
CORNWALL											
Caradon	-	-	-	-	-	-	-	-	-	32,472	512,430
Carrick											
Kerrier	-	-	-	-	-	-	-	-	5,634	69,434	662,216
North Cornwall	-	-	-	-	-	-	-	-	-	34,786	436,246
Penwith	-	-	-	-	-	-	-	-	4,453	52,638	473,426
Restormel	-	102	2,598	-	-	-	-	-	-	112,414	606,627
CUMBRIA											
Allerdale	-	-	-	-	-	-	-	-	-	21,640	822,530
Barrow-in-Furness	-	-	-	-	-	-	-	-	-	20,595	668,168
Carlisle	31,811	-	90	-	-	-	-	-	1,989	119,153	734,403
Copeland	-	-	-	-	-	-	-	-	-	26,288	689,300
Eden	-	-	150	-	-	-	-	-	-	20,710	301,620
South Lakeland	-	-	-	-	-	-	-	-	-	57,691	1,078,003
DERBYSHIRE											
Amber Valley	-	-	-	-	-	-	-	-	12,260	31,907	911,300
Bolsover	7,863	-	-	-	16	-	204	17,000	-	39,998	626,999
Chesterfield	-	-	3,298	-	-	-	-	5,419	-	92,481	785,650
Derby	-	1,412	-	-	-	-	-	-	7,864	123,393	1,812,705
Erewash	-	-	-	-	-	-	-	11,193	-	61,153	916,320
High Peak	-	-	-	-	-	-	-	-	-	53,794	749,787
North East Derbyshire	131	206	-	-	-	-	-	-	-	28,403	1,067,700
South Derbyshire	-	145	-	-	-	-	-	-	-	17,683	490,158
West Derbyshire	8,119	-	-	-	-	410	-	17,153	-	98,444	634,117

CAPITAL EXPENDITURE ON REPLACEMENT VEHICLES				COSTS OF COLLECTION					
				COST PER TONNE					
Revenue (96)	Loan (97)	Repairs & Renewals Fund (98)	Lease (99)	Gross (100)	Net (101)	Net cost per domestic hereditament (102)	Net cost per head of population (103)	Waste collected per head of population (104)	Local Authority
£'000	£'000	£'000	£'000	£	£	£	£	kg	
									NON-MET DISTRICTS-ENGLAND
									AVON
-	-	-	-	25.57	24.80	16.48	6.53	263	Bath
-	-	-	365	38.78	33.17	25.54	9.79	295	Bristol
-	-	-	39	23.16	21.13	13.42	4.93	227	Kingswood
-	-	-	92	21.00	18.59	18.25	6.31	329	Northavon
-	-	-	-	26.66	24.57	21.82	8.10	322	Wansdyke
-	-	-	91	24.90	20.10	17.23	6.59	313	Woodspring
									BEDFORDSHIRE
-	-	-	67	49.71	46.16	27.67	9.90	214	Luton
-	-	39	-	23.27	22.71	21.26	7.51	331	Mid Bedfordshire
-	-	-	84	24.22	21.09	19.29	7.16	340	North Bedfordshire
-	-	-	65	22.25	20.07	20.60	7.36	367	South Bedfordshire
									BERKSHIRE
-	-	-	33	29.07	27.81	15.41	5.56	200	Bracknell
-	-	-	76	31.66	30.45	21.99	8.08	265	Newbury
-	-	65	-	37.17	32.90	20.35	7.26	221	Reading
-	-	-	-	38.30	35.23	22.70	7.93	225	Slough
-	-	81	-	41.81	35.96	24.42	9.02	251	Windsor & Maidenhead
-	-	47	-	19.93	17.69	15.64	5.30	300	Wokingham
									BUCKINGHAMSHIRE
-	-	-	86	29.90	24.42	18.43	6.62	271	Aylesbury Vale
-	-	-	-	24.76	24.40	19.37	7.08	290	Chiltern
-	-	-	-	23.31	23.31	13.34	5.01	213	Milton Keynes
-	-	11	-	33.96	30.60	24.58	9.27	299	South Bucks
-	-	80	-	33.13	30.45	23.22	8.23	271	Wycombe
									CAMBRIDGESHIRE
-	-	31	-	22.79	20.39	16.70	6.19	304	Cambridge
-	-	33	-	23.98	21.59	16.43	6.54	299	East Cambridgeshire
-	-	31	-	17.29	16.04	16.38	6.52	404	Fenland
-	31	-	-	18.43	17.35	16.28	5.97	344	Huntingdon
									Peterborough
-	-	45	-	22.97	22.50	18.08	6.53	281	South Cambridgeshire
									CHESHIRE
-	-	-	28	33.27	30.80	24.53	9.37	304	Chester
-	31	31	-	31.29	29.29	22.47	8.28	283	Congleton
-	30	-	-	30.74	28.79	22.49	8.85	307	Crewe & Nantwich
									Ellesmere Port & Neston
-	-	198	-	37.90	34.79	25.56	9.26	267	Halton
-	-	-	60	28.21	25.83	22.83	8.92	343	Macclesfield
									Vale Royal
-	-	-	29	34.52	32.09	24.82	9.21	287	Warrington
									CLEVELAND
-	-	-	-	31.10	27.71	24.84	9.22	322	Hartlepool
-	-	-	118	32.11	27.14	23.04	8.62	309	Langbaurgh
-	-	-	-	17.59	13.59	21.51	7.78	540	Middlesbrough
-	-	-	35	24.27	19.26	13.59	5.77	287	Stockton-on-Tees
									CORNWALL
-	-	59	-	14.73	13.83	17.77	7.39	519	Caradon
									Carrick
-	-	-	-	30.43	27.71	19.82	7.80	277	Kerrier
-	-	-	-	23.74	21.93	15.39	6.60	289	North Cornwall
-	-	-	32	20.93	18.95	19.42	8.78	452	Penwith
-	-	3	-	19.27	16.18	19.53	7.65	459	Restormel
									CUMBRIA
-	-	-	-	24.83	24.19	21.99	8.62	356	Allerdale
-	-	-	35	32.34	31.37	23.47	9.04	288	Barrow-in-Furness
-	-	-	72	34.10	29.42	18.69	7.26	247	Carlisle
-	-	26	-	26.58	25.61	25.69	9.51	371	Copeland
-	-	-	29	21.29	19.92	17.17	6.92	347	Eden
-	-	156	-	33.40	31.71	27.22	11.18	353	South Lakeland
									DERBYSHIRE
-	-	-	62	21.32	20.87	21.10	8.35	406	Amber Valley
-	-	-	-	21.47	20.18	23.01	8.84	438	Bolsover
-	-	124	-	30.07	26.91	20.21	8.11	301	Chesterfield
-	-	-	-	58.63	55.13	21.76	8.44	154	Derby
-	-	12	-	36.20	33.94	22.75	8.85	261	Erewash
-	-	89	-	33.59	31.26	23.99	9.13	281	High Peak
-	-	-	182	26.41	25.73	28.97	10.97	427	North East Derbyshire
-	-	-	30	25.71	24.82	19.28	7.12	287	South Derbyshire
-	-	-	-	22.71	19.66	24.34	9.38	477	West Derbyshire

WASTE COLLECTION STATISTICS

Local Authority	POPULATION & AREA			NUMBER OF HEREDITAMENTS				WASTE COLLECTED – BY WEIGHT				
											% OF TOTAL WASTE COLLECTED BY CONTRACTORS	
	Population at 30.6.83	Area	Density of population at 30.6.83	Domestic	Commercial	Industrial	Other	Total weight of all waste	Actual or estimated weight of all waste	Estimated % of waste weighed	Routine collections	Abnormal circumstances
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	'000	hectares	per hectare					tonnes		%	%	%
NON-MET DISTRICTS-ENGLAND												
DEVON												
East Devon	108.4	81.656	1.33	45,999	7,706	111	1,637	33,300	E	5	–	–
Exeter	101.8	4,388	23.20	36,769	7,537	67	855	24,882	A	100	–	–
Mid Devon	59.1	91,561	0.65	22,149	4,146	124	785	12,850	E	2	–	–
North Devon	78.6	108,620	0.72	30,365	6,122	154	1,333	10,500	E	–	–	–
Plymouth	255.2	7,929	32.19	85,858	12,526	201	1,499	66,700	E	–	–	–
South Hams	68.0	88,695	0.77	29,770	5,100	117	1,214	27,000	E	15	–	–
Teignbridge	96.8	67,498	1.43	38,308	6,663	197	1,839	35,400	E	10	–	–
Torbay	113.1	6,282	18.00	45,879	9,812	86	1,340	34,009	A	100	–	–
Torridge	48.7	98,492	0.49	19,655	4,038	107	1,064	13,900	E	–	–	–
West Devon	43.3	115,973	0.37	16,617	2,393	71	715	13,000	E	–	–	–
DORSET												
Bournemouth	145.1	4,623	31.39	58,877	15,441	146	1,748	43,000	E	–	–	–
Christchurch	40.3	5,045	7.99	17,986	4,429	121	251	10,200	E	8	–	–
North Dorset	49.7	60,870	0.82	18,844	3,302	121	646	13,800	E	5	–	–
Poole	121.5	6,378	19.05	50,341	10,666	468	868	30,904	A	100	–	–
Purbeck												
West Dorset	81.2	108,280	0.75	33,082	6,875	202	1,388	20,888	E	40	–	–
Weymouth & Portland												
Wimborne	71.6	35,479	2.02	29,014	3,764	266	473	31,200	E	10	–	–
DURHAM												
Chester-le-Street	52.2	6,373	7.94	20,213	3,455	55	313	17,000	E	–	–	–
Darlington	99.7	19,840	5.03	38,181	5,332	100	555	28,400	E	2	–	–
Derwentside	87.3	27,084	3.22	34,998	7,269	214	621	37,128	E	–	–	–
Durham	88.6	18,968	4.67	31,359	5,558	82	733	24,000	E	–	–	–
Easington												
Sedgefield	91.2	21,772	4.19	35,138	7,363	166	500	26,000	E	2	–	–
Teesdale	24.7	84,300	0.29	9,849	1,941	56	489	14,500	E	–	–	–
Wear Valley	64.3	50,507	1.27	25,547	5,140	127	587	27,456	E	–	–	–
EAST SUSSEX												
Brighton	148.3	5,813	25.51	63,145	10,380	243	1,149	42,000	E	98	–	–
Eastbourne	79.0	4,415	17.89	33,916	9,017	111	755	22,150	A	100	100	–
Hastings	76.9	2,972	25.87	32,230	6,045	138	708	22,000	E	–	–	–
Hove	89.0	2,386	37.30	39,974	8,237	146	1,024	26,402	A	100	–	–
Lewes	80.8	29,211	2.77	32,994	5,114	202	693	19,780	A	100	–	–
Rother	78.0	51,054	1.53	34,919	6,353	115	1,040	22,000	E	2	–	–
Wealden	121.8	83,659	1.46	48,428	7,527	180	1,067	**	**	–	–	–
ESSEX												
Basildon	156.3	11,097	14.08	57,293	12,265	347	1,068	56,161	E	–	–	–
Braintree	113.8	61,206	1.86	42,823	8,793	247	870	34,990	E	–	–	–
Brentwood	71.9	14,888	4.83	26,843	4,685	106	521	43,000	E	–	–	–
Castle Point	85.9	4,387	19.58	32,388	3,585	230	251	**	**	–	–	–
Chelmsford	143.3	34,223	4.19	52,774	8,872	212	706	38,860	E	8	–	–
Colchester	140.0	33,429	4.19	50,723	7,628	145	1,032	31,050	E	–	–	–
Epping Forest	114.9	34,458	3.33	44,851	9,077	169	783	33,000	E	75	–	–
Harlow	78.0	2,359	30.48	28,660	13,894	148	312	22,250	E	–	–	–
Maldon	49.2	35,762	1.38	19,154	2,735	199	526	**	**	–	80	–
Rochford	74.8	16,898	4.43	27,625	2,397	209	388	21,642	E	75	–	–
Southend-on-Sea	157.7	4,170	37.82	64,971	11,404	418	635	51,075	E	–	100	–
Tendring	116.6	33,654	3.46	52,276	6,811	230	1,229	35,480	E	–	–	–
Thurrock	125.3	16,303	7.69	45,706	10,325	163	614	35,800	E	–	–	–
Uttlesford												
GLOUCESTERSHIRE												
Cheltenham	86.0	3,455	24.89	34,841	7,327	159	511	24,000	E	–	–	–
Cotswold	70.3	114,246	0.62	27,400	4,934	167	1,070	18,425	E	4	–	–
Forest of Dean	73.0	52,764	1.38	27,455	3,429	194	699	21,520	E	2	–	–
Gloucester	92.2	3,334	27.65	33,770	4,869	177	529	25,350	A	2	–	–
Stroud	102.7	45,441	2.26	39,504	5,095	282	912	25,940	A	–	–	–
Tewkesbury	81.9	45,027	1.82	30,592	3,916	218	662	**	**	**	–	–
HAMPSHIRE												
Basingstoke & Deane	134.0	63,689	2.10	48,076	12,608	124	873	33,592	A	98	–	–
East Hampshire	93.6	51,484	1.82	33,726	5,424	159	669	22,880	E	80	–	–
Eastleigh	96.0	7,974	12.04	36,371	5,762	139	407	47,889	E	38	–	–
Fareham	90.8	7,413	12.25	33,382	4,416	120	552	42,000	E	20	–	–
Gosport	77.1	2,518	30.62	29,022	4,773	87	415	22,840	E	–	–	–
Hart	77.2	21,832	3.54	25,653	3,672	61	375	22,548	E	–	–	–
Havant	116.6	5,555	20.99	43,397	6,663	191	706	32,007	A	100	–	–
New Forest	149.0	79,309	1.98	60,434	11,547	282	1,807	39,000	E	35	–	–
Portsmouth	191.6	3,741	51.22	68,075	10,552	286	1,704	60,500	E	88	–	–
Rushmoor	79.4	3,623	21.92	24,322	5,042	99	302	28,089	E	74	–	–
Southampton	206.3	4,899	42.11	77,307	14,041	244	1,436	61,900	E	64	–	–
Test Valley	95.5	63,725	1.50	32,832	7,383	227	777	25,652	E	–	–	–
Winchester	92.3	65,936	1.40	33,248	6,402	101	937	21,018	A	88	–	–

WASTE COLLECTED – BY TYPE			WASTE COLLECTED – BY METHOD OF STORAGE				METHODS OF COLLECTION						
							HOUSEHOLD WASTE						
Household waste (13)	Commercial waste (14)	Industrial waste (15)	Contained in dustbins (16)	Contained in disposable sacks (17)	Contained in bulk storage containers (18)	Other (19)	Backdoor collect & return (20)	Kerbside (21)	Other collect & return (22)	Skep (23)	Other normal methods (24)	Special collections (25)	Local Authority
%	%	%	%	%	%	%	%	%	%	%	%	%	
													NON-MET DISTRICTS-ENGLAND
													DEVON
85	15	-	100	-	-	-	-	39	-	61	-	-	East Devon
75	25	-	75	14	10	1	10	5	-	85	-	-	Exeter
95	5	-	65	30	-	5	-	95	-	-	-	5	Mid Devon
75	20	5	-	100	-	-	10	85	-	-	-	5	North Devon
81	19	-	79		17	4	7	14	-	74	3	2	Plymouth
80	15	5	60	35	-	5	10	45	-	45	-	-	South Hams
90	10	-	85	5	-	10	60	40	-	-	-	-	Teignbridge
87	13	-	85	2	13	-	-	8	-	92	-	-	Torbay
86	14	-	3	97	-	-	-	100	-	-	-	-	Torridge
86	13	1	90	10	-	-	1	95	1	-	-	3	West Devon
													DORSET
77	22	1	70	-	30	-	99	-	-	-	-	1	Bournemouth
90	9	1	80	15	2	3	28	-	-	70	2	-	Christchurch
94	6	-	51	49	-	-	4	94	-	-	-	2	North Dorset
63	37		68	10	22	-	100	-	-	-	-	-	Poole
													Purbeck
95	5	-	50	32	-	18	2	98	-	-	-	-	West Dorset
													Weymouth & Portland
77	23	-	-	75	25	-	-	95	-	-	-	5	Wimborne
													DURHAM
95	5	-	90	-	-	10	80	-	15	-	-	5	Chester-le-Street
80	18	2	64	12	19	5	100	-	-	-	-	-	Darlington
89	11	-	100		-	-	100	-	-	-	-	-	Derwentside
83	16	1	81	2	17	-	100	-	-	-	-	-	Durham
													Easington
85	10	5	100	-	-	-	100	-	-	-	-	-	Sedgefield
87	12	1	1	95	-	4	97	1	1	-	-	1	Teesdale
91	7	2	60	27	2	11	100	-	-	-	-	-	Wear Valley
													EAST SUSSEX
80	20	-	80	-	20	-	57	2	-	41	-	-	Brighton
85	9	6	81	-	18	1	86	-	-	-	14	-	Eastbourne
85	12	3	90	-	9	1	-	-	-	100	-	-	Hastings
85	13	2	65	15	15	5	-	10	-	76	10	4	Hove
80	20	-	94		2	4	-	-	-	94	2	4	Lewes
93	5	-	89	4	3	4	-	-	-	93	3	4	Rother
87	13	-	93	-	7	-	-	-	13	78	7	2	Wealden
													ESSEX
85	15	-	2	74	12	12	2	-	80	-	16	2	Basildon
83	17	-	-	83	12	5	84	14	-	-	-	2	Braintree
80	15	5	70	10	20	-	-	-	10	70	17	3	Brentwood
82	9	9	-	**	**	**	93	-	-	-	-	7	Castle Point
84	16	-	81		16	3	-	-	-	97	-	3	Chelmsford
94	6	-	-	84	15	1	100	-	-	-	-	-	Colchester
93	7	-	-	95	5	-	-	90	-	-	5	5	Epping Forest
90	7	3	82	3	15	-	-	-	-	88	-	12	Harlow
80	15	5	45	55	-	-	40	-	-	50	-	10	Maldon
88	12	-	29	63	6	2	72	26	-	-	-	2	Rochford
84	15	1	-	84	16	-	95	-	-	-	-	5	Southend-on-Sea
84	16	-	-	74	18	8	93	5	-	-	1	1	Tendring
90	8	2	87	2	11	-	-	-	-	95	5	-	Thurrock
													Uttlesford
													GLOUCESTERSHIRE
90	10	-	61	1	19	19	-	5	-	89	5	1	Cheltenham
85	10	5	50	40	-	10	7	90	-	-	-	3	Cotswold
75	25	-	50	40	-	10	10	70	-	-	-	20	Forest of Dean
87	13	-	60	20	10	10	4	89	-	-	5	2	Gloucester
90	10	-	4	92	-	4	2	88	-	-	-	10	Stroud
**	**	**	**	**	**	**	2	-	98	-	-	-	Tewkesbury
													HAMPSHIRE
86	14		97			3	64	28	-	-	-	8	Basingstoke & Deane
80	20	-	70	28	1	1	2	83	-	9	1	5	East Hampshire
92	8	-	-	95	5	-	100	-	-	-	-	-	Eastleigh
85	15	-	85	-	15	-	-	-	-	93	5	2	Fareham
80	12	8	68	-	24	8	10	-	-	80	5	5	Gosport
81	19	-	81		19	-	35	58	-	-	-	7	Hart
86	11	3	82	-	18	-	5	-	-	95	-	-	Havant
87	13	-	13	87	-	-	100	-	-	-	-	-	New Forest
83	17	-	57	-	23	20	70	30	-	-	-	-	Portsmouth
68	32	-	43	28	24	5	83	12	-	-	2	3	Rushmoor
75	25	-	4	68	21	7	69	-	-	-	30	1	Southampton
85	15	-	-	88	10	2	100	-	-	-	-	-	Test Valley
92	8	-	95	-	5	-	49	20	30	-	1	-	Winchester

Local Authority	METHODS OF COLLECTION: COMMERCIAL WASTE: Backdoor collect & return (26)	Kerbside (27)	Other collect & return (28)	Skep (29)	Other normal methods (30)	Special collections (31)	Collection system (See Notes) (32)	NUMBER OF DISPOSABLE SACKS USED: Paper (33)	Plastic (34)
	%	%	%	%	%	%		'000	'000
NON-MET DISTRICTS-ENGLAND									
DEVON									
East Devon	-	36	-	64	-	-	T	-	140
Exeter	76	24	-	-	-	-	T	-	-
Mid Devon	-	100	-	-	-	-	T	-	161
North Devon	50	50	-	-	-	-	T	-	1,800
Plymouth	68	-	-	-	27	5	T	-	-
South Hams	20	70	10	-	-	-	T	-	-
Teignbridge	60	40	-	-	-	-	T	-	50
Torbay	-	20	-	80	-	-	T	-	48
Torridge	-	100	-	-	-	-	T	-	1,105
West Devon	10	90	-	-	-	-	T	-	3
DORSET									
Bournemouth	100	-	-	-	-	-	T	-	-
Christchurch	28	-	-	65	7	-	T	-	78
North Dorset	10	90	-	-	-	-	T	-	60
Poole	100	-	-	-	-	-	T	-	-
Purbeck									
West Dorset	-	100	-	-	-	-	T	-	54
Weymouth & Portland									
Wimborne	-	45	-	-	50	5	T	-	2,000
DURHAM									
Chester-le-Street	-	-	-	-	60	40	T	-	-
Darlington	-	-	4	-	83	13	T	-	693
Derwentside	100	-	-	-	-	-	T	161	480
Durham	100	-	-	-	-	-	T	-	132
Easington									
Sedgefield	100	-	-	-	-	-	T	-	1,227
Teesdale	85	10	5	-	-	-	B	411	336
Wear Valley	100	-	-	-	-	-	T	240	577
EAST SUSSEX									
Brighton	80	4	16	-	-	-	T	-	-
Eastbourne	75	-	-	-	23	2	T	-	-
Hastings	100	-	-	-	-	-	T	-	119
Hove	-	-	-	31	40	29	T	-	-
Lewes	-	-	-	52	48	-	T	-	50
Rother	-	1	-	94	4	1	T	34	82
Wealden	-	-	84	-	16	-	T	-	-
ESSEX									
Basildon	53	-	-	-	47	-	T	-	3,700
Braintree	13	-	-	-	70	17	T	-	3,848
Brentwood	10	-	-	10	80	-	T	-	26
Castle Point	99	-	-	-	-	1	T	-	2,400
Chelmsford	-	-	20	-	80	-	T	-	140
Colchester	100	-	-	-	-	-	T	-	3,800
Epping Forest	-	50	-	-	50	-	T	-	2,700
Harlow	-	-	-	50	50	-	B	-	201
Maldon	95	-	-	-	-	5	B	-	750
Rochford	90	-	10	-	-	-	B	-	1,950
Southend-on-Sea	100	-	-	-	-	-	**	-	**
Tendring	10	-	-	-	87	3	T	-	3,730
Thurrock	-	-	-	50	50	-	B	-	62
Uttlesford									
GLOUCESTERSHIRE									
Cheltenham	10	5	-	5	80	-	T	-	52
Cotswold	10	90	-	-	-	-	T	43	41
Forest of Dean	-	80	-	-	-	20	B	-	480
Gloucester	10	30	-	-	60	-	T	-	-
Stroud	5	45	50	-	-	-	T	-	2,500
Tewkesbury	10	-	90	-	-	-	T	20	25
HAMPSHIRE									
Basingstoke & Deane	100	-	-	-	-	-	T	1,270	-
East Hampshire	1	46	-	-	50	3	T	-	-
Eastleigh	100	-	-	-	-	-	T	-	2,882
Fareham	70	-	-	20	9	1	T	-	8
Gosport	-	3	-	5	92	-	T	-	-
Hart	100	-	-	-	-	-	T	-	**
Havant	2	-	-	-	98	-	T	-	-
New Forest	100	-	-	-	-	-	T	-	3,425
Portsmouth	-	-	-	-	95	5	T	-	-
Rushmoor	62	7	-	-	28	3	T	-	280
Southampton	85	-	-	-	15	-	T	-	6,500
Test Valley	100	-	-	-	-	-	B	-	3,000
Winchester	75	5	-	20	-	-	T	-	-

NUMBER OF BULK STORAGE CONTAINERS		PROVISION OF DUSTBINS/ SACKHOLDERS		FREQUENCY OF COLLECTION PER WEEK						Local Authority
				NORMAL HOUSEHOLD WASTE			COMMERCIAL WASTE			
With compaction	Without compaction	Charge (See Notes)	Number	Twice or more	Once	Less than once	Twice or more	Once	Less than once	
(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	
				%	%	%	%	%	%	
										NON-MET DISTRICTS-ENGLAND
										DEVON
-	-	N	-	-	96	4	3	95	2	East Devon
-	382	N	-	-	100	-	85	15	-	Exeter
-	-	N	8	-	90	10	10	90	-	Mid Devon
-	-	N	-	-	100	-	25	75	-	North Devon
-	1,750	N	-	-	100	-	15	85	-	Plymouth
-	-	N	-	-	100	-	25	75	-	South Hams
-	-	N	-	-	98	2	5	95	-	Teignbridge
-	592	N	-	-	100	-	25	75	-	Torbay
-	-	N	-	1	99	-	10	90	-	Torridge
-	-	N	10	-	100	-	20	80	-	West Devon
										DORSET
-	3,550	N	-	-	100	-	20	80	-	Bournemouth
-	130	N	-	-	100	-	10	90	-	Christchurch
-	-	N	10	-	60	40	2	70	28	North Dorset
-	1,742	C	-	-	100	-	10	90	-	Poole
										Purbeck
-	-	N	-	-	100	-	48	52	-	West Dorset
										Weymouth & Portland
-	500	C	-	-	100	-	50	45	5	Wimborne
										DURHAM
-	-	F	2,000	-	100	-	25	75	-	Chester-le-Street
-	543	N	-	-	100	-	8	92	-	Darlington
-	-	C	-	-	100	-	5	95	-	Derwentside
-	470	F	2,635	-	100	-	1	99	-	Durham
										Easington
-	-	N	-	-	100	-	40	60	-	Sedgefield
-	-	F	188	-	97	3	2	96	2	Teesdale
-	27	C	163	-	100	-	10	90	-	Wear Valley
										EAST SUSSEX
-	780	N	-	-	100	-	50	50	-	Brighton
-	1,130	**	-	-	100	-	25	75	-	Eastbourne
-	240	N	-	-	100	-	10	90	-	Hastings
-	300	N	-	15	85	-	3	95	2	Hove
-	395	N	-	-	100	-	-	100	-	Lewes
-	170	N	-	-	100	-	20	80	-	Rother
-	4,800	F	3,200	-	90	10	-	100	-	Wealden
										ESSEX
-	1,330	N	-	-	100	-	5	95	-	Basildon
-	813	N	-	-	100	-	32	68	-	Braintree
-	975	N	14	-	100	-	10	90	-	Brentwood
-	504	N	-	-	100	-	2	98	-	Castle Point
-	750	N	-	-	100	-	15	83	2	Chelmsford
400	-	N	-	-	100	-	50	50	-	Colchester
-	459	N	-	-	100	-	1	99	-	Epping Forest
-	540	C	19	-	10	90	10	90	-	Harlow
-	-	N	-	-	100	-	30	70	-	Maldon
-	272	F	9,290	-	100	-	10	85	5	Rochford
-	**	N	-	-	100	-	**	**	**	Southend-on-Sea
-	1,313	N	-	-	100	-	20	80	-	Tendring
-	1,000	N	-	-	100	-	5	95	-	Thurrock
										Uttlesford
										GLOUCESTERSHIRE
-	1,035	N	-	1	99	-	75	25	-	Cheltenham
-	-	N	-	-	100	-	-	100	-	Cotswold
-	-	F	40	-	95	5	-	100	-	Forest of Dean
1	330	N	-	-	100	-	25	75	-	Gloucester
-	-	N	-	-	100	-	5	95	-	Stroud
-	-	N	-	-	100	-	-	100	-	Tewkesbury
										HAMPSHIRE
-	220	C	70	1	99	-	1	99	-	Basingstoke & Deane
-	100	N	-	-	100	-	-	100	-	East Hampshire
-	551	C	28	-	100	-	32	68	-	Eastleigh
-	460	N	-	-	100	-	5	86	9	Fareham
-	761	N	-	1	99	-	80	20	-	Gosport
-	193	C	-	-	100	-	-	100	-	Hart
-	1,507	N	-	-	100	-	21	79	-	Havant
-	-	N	-	-	100	-	1	99	-	New Forest
-	5,150	F	650	-	100	-	40	60	-	Portsmouth
-	1,600	F	1,025	-	100	-	15	84	1	Rushmoor
-	1,456	N	-	6	94	-	60	40	-	Southampton
-	425	N	-	-	100	-	10	90	-	Test Valley
-	670	F	3,500	-	100	-	20	80	-	Winchester

Local Authority	NUMBER OF BOTTLE BANKS		WASTE OIL COLLECTION POINTS		AMOUNT OF WASTE				
	Owned & operated by the local authority (45)	Other (46)	Owned & operated by the local authority (47)	Other (e.g. garages) (48)	Paper (49)	Abandoned Vehicles (50)	Glass (51)	Oil (52)	Ferrous Metals (53)
					tonnes	no.	tonnes	'000 litres	tonnes
NON-MET DISTRICTS-ENGLAND									
DEVON									
East Devon	-	2	3	-	-	47	-	2	-
Exeter	-	-	-	-	-	95	-	-	-
Mid Devon	-	1	-	-	-	50	80	-	-
North Devon	-	-	-	-	-	122	-	-	-
Plymouth	-	-	-	-	-	968	-	-	44
South Hams	-	1	-	-	-	180	-	-	-
Teignbridge	-	5	-	-	-	-	-	-	-
Torbay	-	-	-	-	-	73	-	-	-
Torridge	-	1	-	-	-	28	-	-	-
West Devon	-	-	-	-	-	-	-	-	-
DORSET									
Bournemouth	-	-	-	-	-	328	-	-	-
Christchurch	-	-	-	**	-	32	-	-	-
North Dorset	-	-	-	-	-	-	-	-	-
Poole	-	-	-	-	-	22	-	-	-
Purbeck									
West Dorset	5	-	-	-	-	42	170	-	-
Weymouth & Portland									
Wimborne	-	-	-	-	-	21	-	-	-
DURHAM									
Chester-le-Street	2	-	-	-	-	6	93	-	-
Darlington	-	12	1	-	-	44	263	-	-
Derwentside	-	-	-	-	-	28	-	-	-
Durham	-	4	1	-	693	42	157	2	-
Easington									
Sedgefield	-	-	-	-	-	-	-	-	-
Teesdale	-	-	-	-	-	3	-	-	-
Wear Valley	-	-	-	-	-	14	-	-	-
EAST SUSSEX									
Brighton	-	24	-	-	-	180	430	-	-
Eastbourne	-	12	-	-	-	48	264	-	-
Hastings	-	7	-	-	-	55	260	-	-
Hove	9	-	-	-	-	129	310	-	-
Lewes	-	8	-	-	-	63	559	-	-
Rother	-	10	-	-	-	102	-	-	-
Wealden	-	11	-	-	-	100	446	-	-
ESSEX									
Basildon	-	30	-	13	-	247	-	-	-
Braintree	-	20	-	-	-	275	357	-	-
Brentwood	-	8	-	-	-	28	-	-	-
Castle Point	-	10	-	-	-	16	204	-	-
Chelmsford	-	3	-	-	-	-	-	-	-
Colchester	-	24	2	**	1,762	120	398	10	5
Epping Forest	-	12	-	-	-	130	350	-	-
Harlow	-	14	-	-	-	-	2	-	-
Maldon	-	16	-	4	-	24	192	-	-
Rochford	-	16	1	11	-	123	185	2	-
Southend-on-Sea	-	12	**	10	**	144	500	**	**
Tendring	-	8	-	-	-	90	167	-	-
Thurrock	-	-	-	-	-	**	-	-	-
Uttlesford									
GLOUCESTERSHIRE									
Cheltenham	5	-	-	-	-	87	570	-	-
Cotswold	2	-	1	-	14	-	155	1	-
Forest of Dean	5	-	-	-	-	-	**	-	-
Gloucester	6	-	1	-	-	25	381	**	-
Stroud	8	-	3	-	-	34	499	-	-
Tewkesbury	3	-	1	-	-	50	180	1	-
HAMPSHIRE									
Basingstoke & Deane	15	-	-	-	-	138	320	-	-
East Hampshire	-	2	-	-	-	290	290	-	-
Eastleigh	5	-	1	10	-	129	495	-	-
Fareham	3	-	-	-	-	-	221	-	-
Gosport	-	-	-	-	-	289	-	-	-
Hart	-	3	-	-	-	-	-	-	-
Havant	4	-	-	-	-	-	250	1	-
New Forest	4	-	2	-	-	**	528	**	-
Portsmouth	5	-	-	1	-	199	205	8	-
Rushmoor	-	21	1	-	1,775	120	307	7	-
Southampton	6	-	1	2	-	323	770	3	-
Test Valley	2	-	2	-	-	287	448	**	-
Winchester	3	-	-	-	-	60	307	-	-

RECLAIMED		COLLECTION VEHICLES				COLLECTION VEHICLES				
		SPECIALIST				SPECIALIST				
Non-Ferrous Metals (54)	Other (55)	With compaction (56)	Without compaction (57)	General purpose (58)	Total (59)	With compaction (60)	Without compaction (61)	General purpose (62)	Total (63)	Local Authority
tonnes	tonnes									
										NON-MET DISTRICTS-ENGLAND
										DEVON
-	-	19	1	-	20	-	-	-	-	East Devon
-	-	13	-	-	13	-	-	-	-	Exeter
-	-	10	-	2	12	-	-	-	-	Mid Devon
-	-	11	8	1	20	-	-	-	-	North Devon
-	-	35	3	-	38	1	1	-	2	Plymouth
-	-	14	3	-	17	-	-	-	-	South Hams
-	-	18	-	-	18	-	-	-	-	Teignbridge
-	-	21	-	1	22	-	-	-	-	Torbay
-	-	9	-	-	9	-	-	-	-	Torridge
-	-	9	-	*	9	-	-	-	-	West Devon
										DORSET
-	-	29	1	-	30	-	-	-	-	Bournemouth
-	-	7	-	1	8	-	-	-	-	Christchurch
-	-	8	-	*	8	-	-	-	-	North Dorset
-	-	20	-	-	20	-	-	-	-	Poole
										Purbeck
-	-	15	1	4	20	-	-	-	-	West Dorset
										Weymouth & Portland
-	-	9	2	1	12	-	-	-	-	Wimborne
										DURHAM
-	-	8	-	2	10	-	-	-	-	Chester-le-Street
-	-	18	1	2	21	-	-	-	-	Darlington
-	-	11	2	4	17	-	-	-	-	Derwentside
-	-	18	-	1	19	-	-	-	-	Durham
										Easington
-	-	16	-	-	16	-	-	-	-	Sedgefield
-	-	8	2	-	10	-	-	-	-	Teesdale
-	-	16	1	-	17	-	-	-	-	Wear Valley
										EAST SUSSEX
-	-	32	-	-	32	-	-	-	-	Brighton
-	-	**	**	**	**	12	3	-	15	Eastbourne
-	-	10	-	2	12	-	-	-	-	Hastings
-	-	14	-	-	14	-	-	-	-	Hove
-	-	17	-	-	17	-	-	-	-	Lewes
-	-	19	-	3	22	-	-	-	-	Rother
-	-	26	1	1	28	-	-	-	-	Wealden
										ESSEX
-	-	18	-	7	25	-	-	-	-	Basildon
-	-	21	-	2	23	-	-	-	-	Braintree
-	-	12	1	-	13	-	-	-	-	Brentwood
-	-	11	1	1	13	-	-	-	-	Castle Point
-	-	27	3	-	30	-	-	-	-	Chelmsford
-	-	23	1	1	25	-	-	-	-	Colchester
-	-	16	-	2	18	-	-	-	-	Epping Forest
-	-	12	1	-	13	-	-	-	-	Harlow
-	-	1	1	1	3	6	-	1	7	Maldon
-	-	10	-	-	10	-	-	-	-	Rochford
**	**	**	**	**	**	**	**	**	**	Southend-on-Sea
-	-	19	-	1	20	-	-	-	-	Tendring
-	-	18	-	3	21	-	-	-	-	Thurrock
										Uttlesford
										GLOUCESTERSHIRE
-	-	16	-	1	17	-	-	-	-	Cheltenham
-	-	12	-	4	16	-	-	-	-	Cotswold
-	-	11	-	1	12	-	-	-	-	Forest of Dean
-	-	8	-	-	8	-	-	-	-	Gloucester
-	-	16	1	4	21	-	-	-	-	Stroud
-	-	12	-	-	12	-	-	-	-	Tewkesbury
										HAMPSHIRE
-	-	33	-	3	36	-	-	-	-	Basingstoke & Deane
-	-	13	3	1	17	-	-	-	-	East Hampshire
-	-	11	-	2	13	-	-	-	-	Eastleigh
-	-	8	-	-	8	-	-	-	-	Fareham
-	-	11	-	-	11	-	-	-	-	Gosport
-	-	11	-	-	11	-	-	-	-	Hart
-	-	16	1	1	18	-	-	-	-	Havant
-	-	20	2	-	22	-	-	-	-	New Forest
-	-	22	2	-	24	-	-	-	-	Portsmouth
-	-	10	2	5	17	-	-	-	-	Rushmoor
-	-	25	1	-	26	-	-	-	-	Southampton
-	-	12	2	-	14	-	-	-	-	Test Valley
-	-	15	-	1	16	-	-	-	-	Winchester

Local Authority	LOCAL AUTHORITY STAFF EMPLOYED AT 31.3.84								EXPENDITURE **			
	Drivers (64)	Loaders (65)	Drivers/ Loaders (66)	Other manual (67)	Vehicle maintenance (68)	Technical & administrative (69)	Total (70)	Contractors' manual employees (71)	Employees (72)	Premises/ depots (73)	Provision of disposable sacks (74)	Provision of dustbins (75)
	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	£	£	£	£
NON-MET DISTRICTS-ENGLAND												
DEVON												
East Devon	2	36	16	-	2	-	56	-	305,371	-	-	-
Exeter	-	38	19	-	4	2	59	-	384,317	7,694	-	-
Mid Devon	-	17	7	-	-	2	26	-	202,283	9,296	3,463	62
North Devon	-	12	22	-	2	6	42	-	209,802	1,869	37,521	-
Plymouth	21	91	7	-	5	12	136	2	1,045,193	8,291	-	-
South Hams	-	25	10	-	-	-	35	-	349,485	14,491	-	53
Teignbridge	12	27	-	-	2	3	44	-	402,689	1,775	16,722	-
Torbay	13	48	11	5	2	1	80	-	613,414	46,682	2,923	-
Torridge	7	8	-	-	1	2	18	-	127,361	7,714	46,373	-
West Devon	7	10	*	-	-	1	18	-	156,093	8,174	302	-
DORSET												
Bournemouth	-	64	21	-	4	5	94	-	618,278	37,920	-	-
Christchurch	9	21	-	-	-	1	31	-	214,391	5,813	2,365	-
North Dorset	-	5	11	-	1	1	18	-	129,184	2,149	2,187	237
Poole	-	48	20	-	3	4	75	-	659,624	25,614	-	-
Purbeck												
West Dorset	9	18	-	-	2	3	32	-	232,970	27,046	1,369	-
Weymouth & Portland												
Wimborne	12	16	1	-	2	3	34	-	220,564	10,157	64,011	-
DURHAM												
Chester-le-Street	9	24	-	-	2	3	38	-	321,170	4,268	-	8,920
Darlington	17	51	-	1	7	2	78	-	669,113	13,656	27,126	-
Derwentside	13	50	-	-	-	-	63	-	641,505	4,133	45,818	423
Durham	14	54	4	2	4	3	81	-	595,096	5,184	2,158	16,544
Easington												
Sedgefield	-	40	16	-	2	3	61	-	440,725	9,458	51,308	-
Teesdale	-	10	12	-	3	1	26	-	152,670	4,090	45,414	724
Wear Valley	-	35	11	-	3	1	50	-	421,431	12,715	40,972	-
EAST SUSSEX												
Brighton	-	82	38	-	4	5	129	-	1,086,140	28,877	-	-
Eastbourne	##	##	##	##	##	##	##	49	-	-	-	-
Hastings	7	28	2	-	1	2	40	-	329,113	1,372	9,282	-
Hove	-	44	18	-	2	3	67	-	495,406	20,393	-	-
Lewes	-	35	14	-	2	4	55	-	565,857	70,903	-	-
Rother	5	29	17	-	3	7	61	-	556,536	28,301	6,535	-
Wealden	20	47	13	-	7	4	91	-	689,420	60,911	-	-
ESSEX												
Basildon	1	40	17	-	5	4	67	-	649,269	26,179	131,339	-
Braintree	-	37	23	-	3	4	67	-	563,039	21,271	96,580	-
Brentwood	-	38	14	-	-	-	52	-	283,863	36,544	11,973	4,301
Castle Point	8	22	-	1	1	-	32	-	348,459	15,893	79,136	-
Chelmsford	-	47	31	-	2	5	85	-	652,480	-	1,245	-
Colchester	-	48	17	3	4	3	75	-	625,838	37,351	77,732	-
Epping Forest	13	36	12	-	2	5	68	-	572,743	17,960	85,514	-
Harlow	-	21	16	-	-	-	37	-	392,724	40,477	13,279	135
Maldon	-	1	2	-	1	1	5	20	37,570	5,179	7,871	-
Rochford	5	24	6	-	2	2	39	-	298,121	-	39,443	11,143
Southend-on-Sea	##	##	##	##	##	6	6	**	53,991	3,630	-	-
Tendring	-	37	14	-	4	4	59	-	626,041	5,407	102,608	-
Thurrock	-	62	21	-	-	8	91	-	726,405	70,786	3,804	-
Uttlesford												
GLOUCESTERSHIRE												
Cheltenham	11	31	3	-	4	2	51	-	376,425	22,373	5,637	4,633
Cotswold	-	15	11	-	2	1	29	-	267,648	13,052	7,305	-
Forest of Dean	9	18	2	-	4	1	34	-	263,700	76,626	13,760	400
Gloucester	6	24	2	-	2	2	36	-	289,026	48,090	-	-
Stroud	-	27	18	-	2	5	52	-	390,060	47,085	57,883	-
Tewkesbury	11	25	4	-	3	5	48	-	358,863	12,672	12,122	262
HAMPSHIRE												
Basingstoke & Deane	-	45	33	-	1	6	85	-	771,279	-	88,235	-
East Hampshire	12	26	1	2	3	4	48	-	379,480	13,817	-	-
Eastleigh	11	26	2	-	2	3	44	-	395,363	18,716	116,348	-
Fareham	8	36	-	2	3	4	53	-	369,778	6,304	-	2,011
Gosport	8	24	3	-	3	2	40	-	322,914	14,438	-	-
Hart	9	28	-	1	2	4	44	-	319,225	**	3,017	-
Havant	14	40	36	-	3	3	96	-	602,511	48,165	-	-
New Forest	-	56	26	-	2	5	89	-	750,369	36,660	119,460	-
Portsmouth	2	53	18	-	21	6	100	-	915,205	3,930	-	4,496
Rushmoor	-	43	13	5	2	-	63	-	509,596	47,643	6,210	1,931
Southampton	21	71	9	-	6	6	113	-	906,804	47,653	257,135	-
Test Valley	-	36	16	-	2	4	58	-	640,396	43,560	80,040	2,935
Winchester	14	38	1	-	3	1	57	-	443,427	7,229	-	15,217

EXPENDITURE						INCOME			
			AGENCY SERVICES			COLLECTION SERVICES			
Transport & moveable plant (76)	Establishment expenses (77)	Other running expenses (78)	Other local authorities (79)	Contractors (80)	Gross Expenditure (81)	Commercial waste (82)	Bulky household waste (83)	Other (84)	Local Authority
£	£	£	£	£	£	£	£	£	
									NON-MET DISTRICTS-ENGLAND
									DEVON
205,031	9,660	16,141	-	-	736,223	17,087	4,842	638	East Devon
137,789	34,374	30,374	23,500	-	618,248	137,534		-	Exeter
97,271	11,641	1,650	-	-	325,666	8,698	627	1,179	Mid Devon
224,909	40,280	31,769	12,825	1,220	580,198	78,732	2,229	-	North Devon
748,708	158,964	98,322	29,552	-	2,049,330	222,946		1,378	Plymouth
212,624	45,819	6,132	2,770	26,960	638,334	17,007	-	-	South Hams
225,886	25,824	7,233	-	-	680,129	36,789	1,642	2,141	Teignbridge
256,011	127,263	9,633	69,531	-	1,125,457	117,745	-	-	Torbay
119,705	25,371	846	3,487	1,474	332,331	19,512	150	-	Torridge
99,383	20,471	2,154	2,900	-	289,477	11,475	-	6	West Devon
									DORSET
579,666	95,000	13,830	54,443	-	1,399,137	309,829	4,122	55,160	Bournemouth
90,429	36,306	17,014	5,276	-	371,594	27,600	-	-	Christchurch
73,515	12,662	5,993	-	-	225,927	13,656	1,047	601	North Dorset
284,083	40,415	9,251	27,569	-	1,046,556	139,980	-	23,780	Poole
									Purbeck
211,064	30,950	16,343	-	-	519,742	29,891	-	-	West Dorset
									Weymouth & Portland
172,884	53,227	6,985	9,200	-	537,028	75,833	-	3,644	Wimborne
									DURHAM
100,346	71,939	1,373	-	-	508,016	12,060	-	145	Chester-le-Street
161,236	55,998	1,091	-	3,232	931,452	95,551	5,936	-	Darlington
245,976	18,980	6,099	-	-	962,934	16,130	210	-	Derwentside
188,727	14,121	9,068	-	3,168	834,066	48,068	-	-	Durham
									Easington
165,999	60,626	3,041	-	-	731,157	11,405	-	-	Sedgefield
44,133	10,330	964	-	1,120	259,445	3,020	-	-	Teesdale
103,635	13,165	3,151	-	-	595,069	13,091	-	248	Wear Valley
									EAST SUSSEX
494,119	199,269	18,323	52,864	-	1,879,592	274,813	3,961	30,336	Brighton
-	4,510	-	-	380,193	384,703	-	-	-	Eastbourne
119,879	61,832	20,491	15,074	-	557,043	62,116	2,650	5,574	Hastings
163,616	45,471	4,146	-	-	729,032	58,305	13,275	-	Hove
196,353	17,341	29,992	-	-	880,846	88,180	1,150	4,331	Lewes
131,669	15,888	6,711	11,248	20	776,928	37,293	2,533	6,790	Rother
239,607	17,637	5,660	19,071	-	1,032,306	78,697	-	1,279	Wealden
									ESSEX
300,132	66,422	21,388	-	-	1,194,749	116,937	-	4,786	Basildon
179,898	53,427	2,330	6,900	-	923,665	27,521	45,242	2,695	Braintree
117,895	184,308	4,712	-	-	643,596	81,499	738	-	Brentwood
92,874	72,031	8,269	-	-	616,662	30,727	-	-	Castle Point
236,310	9,586	15,634	-	-	915,473	142,780	390	9,100	Chelmsford
203,523	69,596	6,165	55,000	-	1,075,205	148,057	2,135	-	Colchester
249,271	52,342	26,301	-	-	1,004,131	51,033	-	683	Epping Forest
116,557	62,342	35,722	-	-	661,236	62,407	-	7,711	Harlow
14,779	1,807	526	-	225,392	293,124	26,897	-	-	Maldon
165,800	7,000	2,310	-	-	543,817	25,513	68	-	Rochford
3,403	30,699	443	-	1,160,659	1,252,825	-	-	15,726	Southend-on-Sea
265,704	23,435	6,799	-	-	1,030,014	179,309	1,106	2,499	Tendring
229,967	73,816	9,412	-	-	1,114,190	58,887	-	-	Thurrock
									Uttlesford
									GLOUCESTERSHIRE
282,364	17,660	9,960	17,967	-	736,219	79,429	10,218	6,230	Cheltenham
181,263	30,828	5,391	-	-	505,487	7,759	-	206	Cotswold
103,853	10,864	2,274	2,631	-	474,108	10,362	2,194	-	Forest of Dean
111,498	51,671	8,244	17,199	-	525,728	69,480	-	-	Gloucester
133,853	113,038	8,670	-	-	730,589	14,128	4,303	-	Stroud
144,647	11,545	5,548	-	-	545,659	15,293	-	-	Tewkesbury
									HAMPSHIRE
547,874	-	6,639	-	-	1,414,027	19,886	-	4,992	Basingstoke & Deane
231,273	14,265	8,212	3,994	-	651,041	24,649	-	-	East Hampshire
171,653	19,987	3,614	-	-	725,681	59,425	989	7,510	Eastleigh
171,890	11,963	5,095	-	-	567,041	72,116	1,296	-	Fareham
145,893	34,613	3,363	13,165	-	554,386	51,805	4,416	6,671	Gosport
153,590	34,598	5,031	-	-	515,461	50,647	1,201	5,040	Hart
230,239	41,729	17,030	-	-	939,674	54,754	-	2,001	Havant
269,947	47,682	13,638	26,710	41,343	1,305,809	99,362	-	1,314	New Forest
314,613	138,311	29,288	-	-	1,405,843	306,145	-	-	Portsmouth
207,820	136,824	8,702	70,000	-	988,726	300,373	2,814	-	Rushmoor
370,309	185,442	44,696	-	-	1,812,119	357,806	8,327	25,167	Southampton
201,524	21,008	15,002	11,658	-	1,016,123	44,577	37,859	1,775	Test Valley
173,719	59,204	13,067	-	1,974	713,837	66,345	3,540	-	Winchester

Local Authority	INCOME: SALES OF RECLAIMED WASTE: Paper (85)	Abandoned Vehicles (86)	Glass (87)	Oil (88)	Ferrous Metals (89)	Non-Ferrous Metals (90)	Other (91)	CONTRIBUTIONS FROM OTHER AUTHORITIES: Waste Disposal Authority (92)	Other local authorities (93)	Total Income (94)	Total Net Expenditure (95)
	£	£	£	£	£	£	£	£	£	£	£
NON-MET DISTRICTS-ENGLAND											
DEVON											
East Devon	-	-	-	-	-	-	-	-	-	22,367	713,636
Exeter	-	-	-	-	-	-	-	-	-	137,334	480,714
Mid Devon	-	12	-	-	-	-	-	2,486	-	13,002	312,664
North Devon	-	264	-	-	-	-	-	-	-	81,225	498,973
Plymouth	-	1,293	-	-	-	-	-	-	-	225,617	1,823,713
South Hams	-	370	-	-	-	-	-	15,572	1,322	34,271	624,063
Teignbridge	-	39	-	-	-	-	-	2,150	4,932	47,693	632,436
Torbay	-	2,043	-	-	-	-	-	-	-	119,788	1,005,669
Torridge	-	-	-	-	-	-	-	-	350	20,212	312,119
West Devon	-	-	-	-	-	-	-	-	3,430	14,911	274,566
DORSET											
Bournemouth	-	517	-	-	-	-	-	-	-	369,628	1,029,309
Christchurch	-	-	-	-	-	-	-	-	-	27,600	343,994
North Dorset	-	-	-	-	-	-	-	-	-	15,304	210,623
Poole	-	59	-	-	-	-	-	-	-	183,819	862,737
Purbeck											
West Dorset	-	-	6,838	-	-	-	100	-	-	36,849	482,893
Weymouth & Portland											
Wimborne	-	-	-	-	-	-	-	-	-	79,477	457,551
DURHAM											
Chester-le-Street	-	-	-	-	-	-	-	-	-	12,203	495,811
Darlington	-	114	-	-	12	-	-	-	-	101,613	829,839
Derwentside	-	-	-	-	-	-	-	-	-	16,340	946,594
Durham	16,374	-	3,627	-	-	-	-	-	-	68,269	765,797
Easington											
Sedgefield	-	-	-	-	-	-	3,503	-	-	14,908	716,249
Teesdale	-	10	-	-	224	-	-	5,338	-	8,592	250,853
Wear Valley	-	-	-	-	-	-	-	-	855	14,194	580,879
EAST SUSSEX											
Brighton	-	-	-	-	-	-	-	25,000	-	334,110	1,545,482
Eastbourne	-	-	-	-	-	-	-	-	-	-	384,703
Hastings	-	-	208	-	-	-	-	-	-	70,548	486,495
Hove	-	1,040	764	-	-	-	-	-	-	73,384	655,648
Lewes	-	303	303	-	-	-	160	-	-	94,427	786,419
Rother	-	255	950	-	-	-	-	-	-	47,821	729,107
Wealden	-	-	600	-	-	-	-	-	-	80,576	951,730
ESSEX											
Basildon	-	610	576	-	-	-	-	-	-	122,909	1,071,840
Braintree	-	-	-	-	-	-	-	-	-	75,458	848,207
Brentwood	-	63	-	-	-	-	-	-	-	82,300	561,296
Castle Point	-	-	62	-	-	-	74	-	-	30,863	585,799
Chelmsford	-	-	-	-	-	-	-	-	-	152,270	763,205
Colchester	42,513	-	-	-	-	-	-	-	-	192,705	882,500
Epping Forest	-	-	565	-	-	-	-	12,104	-	64,385	939,746
Harlow	-	250	-	-	-	-	-	-	-	70,368	590,888
Maldon	-	-	-	-	-	-	-	-	-	26,897	266,227
Rochford	-	-	218	-	-	-	-	-	-	23,799	518,018
Southend-on-Sea	-	2,058	441	-	-	-	-	-	3,133	23,358	1,229,467
Tendring	-	-	69	-	-	-	-	-	-	182,983	847,031
Thurrock	-	-	-	-	-	-	-	-	-	58,887	1,055,303
Uttlesford											
GLOUCESTERSHIRE											
Cheltenham	-	-	6,198	-	-	-	-	500	-	102,575	633,644
Cotswold	-	-	1,273	-	-	-	-	-	3,366	12,604	492,883
Forest of Dean	-	-	1,891	-	-	-	-	-	-	14,447	459,661
Gloucester	-	-	9,107	-	-	-	-	-	-	78,587	447,141
Stroud	-	238	7,994	-	-	-	-	9,359	-	36,022	714,567
Tewkesbury	-	-	1,679	-	-	-	-	-	-	16,972	528,687
HAMPSHIRE											
Basingstoke & Deane	-	-	-	-	-	-	-	-	-	24,878	1,389,149
East Hampshire	-	-	-	-	-	-	-	-	-	24,649	626,392
Eastleigh	-	-	8,119	-	-	-	-	-	-	76,043	649,638
Fareham	-	-	-	-	-	-	-	-	-	73,412	493,629
Gosport	-	1,259	-	-	-	-	-	-	-	64,151	490,235
Hart	-	-	-	-	-	-	-	-	-	56,888	458,573
Havant	-	-	4,635	75	-	-	-	-	-	61,465	878,209
New Forest	-	208	12,225	-	-	-	-	1,304	15,381	129,794	1,176,015
Portsmouth	-	-	-	-	-	-	-	-	-	306,145	1,099,698
Rushmoor	41,306	-	160	384	-	56	2,286	5,370	-	352,749	635,977
Southampton	-	177	13,876	100	-	-	-	-	-	405,453	1,406,666
Test Valley	-	1,404	7,615	-	-	-	-	-	-	93,230	922,893
Winchester	-	-	5,353	-	-	-	-	-	-	75,238	638,599

1983-84 ACTUALS

CAPITAL EXPENDITURE ON REPLACEMENT VEHICLES				COSTS OF COLLECTION					
				COST PER TONNE					
Revenue (96)	Loan (97)	Repairs & Renewals Fund (98)	Lease (99)	Gross (100)	Net (101)	Net cost per domestic hereditament (102)	Net cost per head of population (103)	Waste collected per head of population (104)	Local Authority
£'000	£'000	£'000	£'000	£	£	£	£	kg	
									NON-MET DISTRICTS-ENGLAND
									DEVON
-	-	3	92	22.11	21.43	15.51	6.58	307	East Devon
-	-	33	-	23.90	18.38	13.07	4.72	244	Exeter
-	-	-	-	25.34	24.33	14.12	5.29	217	Mid Devon
-	-	45	-	54.04	46.30	16.43	6.35	134	North Devon
-	-	-	63	30.28	26.90	21.24	7.15	261	Plymouth
-	-	-	33	24.28	23.06	20.96	9.18	397	South Hams
-	-	-	63	19.21	18.00	16.51	6.53	366	Teignbridge
-	-	138	-	31.05	27.53	21.92	8.89	301	Torbay
-	-	-	34	23.66	22.24	15.88	6.41	285	Torridge
5	-	-	-	22.04	21.16	16.52	6.34	300	West Devon
									DORSET
-	-	119	-	31.27	22.68	17.49	7.10	296	Bournemouth
-	-	-	-	35.91	33.21	19.13	8.54	253	Christchurch
-	-	31	-	16.37	15.26	11.18	4.24	278	North Dorset
-	63	-	-	32.97	27.02	17.14	7.10	254	Poole
									Purbeck
-	-	63	-	24.88	23.12	14.60	5.95	257	West Dorset
									Weymouth & Portland
-	-	-	37	16.92	14.37	15.77	6.39	436	Wimborne
									DURHAM
-	-	4	30	29.88	29.17	24.53	9.50	326	Chester-le-Street
-	-	-	-	32.80	29.22	21.73	8.32	285	Darlington
-	-	-	35	25.94	25.50	27.05	10.84	425	Derwentside
-	-	-	37	34.75	31.91	24.42	8.64	271	Durham
									Easington
-	-	-	65	28.12	27.55	20.38	7.85	285	Sedgefield
-	-	23	-	17.89	17.30	25.47	10.16	587	Teesdale
-	-	-	-	21.67	21.19	22.74	9.03	427	Wear Valley
									EAST SUSSEX
-	-	-	-	43.49	35.54	24.48	10.42	283	Brighton
-	-	-	-	17.37	17.37	11.34	4.87	280	Eastbourne
-	-	-	67	24.63	21.43	15.09	6.33	286	Hastings
66	-	-	-	27.61	24.83	16.40	7.37	297	Hove
-	-	45	-	44.53	39.76	23.84	9.73	245	Lewes
-	-	-	-	34.80	32.63	20.88	9.35	282	Rother
-	-	-	112	**	**	19.65	7.81	**	Wealden
									ESSEX
-	-	-	62	21.27	19.09	18.71	6.86	359	Basildon
-	-	73	-	26.20	24.04	19.81	7.45	307	Braintree
-	34	-	-	14.97	13.05	20.91	7.81	598	Brentwood
-	-	-	-	**	**	18.09	6.82	**	Castle Point
-	-	-	130	23.56	19.64	14.46	5.33	271	Chelmsford
-	-	36	-	32.86	26.65	17.40	6.30	222	Colchester
-	-	10	-	30.43	28.48	20.95	8.18	287	Epping Forest
-	-	29	-	29.72	26.56	20.62	7.58	285	Harlow
-	-	-	-	**	**	13.90	5.41	**	Maldon
-	-	68	-	25.13	23.94	18.75	6.93	289	Rochford
-	-	-	-	24.53	24.17	18.92	7.80	324	Southend-on-Sea
-	-	18	101	29.03	23.87	16.20	7.26	304	Tendring
-	-	-	32	31.12	29.48	23.09	8.42	286	Thurrock
									Uttlesford
									GLOUCESTERSHIRE
-	-	-	65	29.94	25.67	18.19	7.37	279	Cheltenham
-	-	-	35	27.43	26.93	17.99	7.01	262	Cotswold
-	-	-	-	21.91	21.24	16.74	6.30	295	Forest of Dean
-	-	-	-	20.06	16.96	13.24	4.85	275	Gloucester
1	-	-	74	28.94	27.55	18.09	6.96	253	Stroud
-	-	71	-	**	**	17.28	6.46	**	Tewkesbury
									HAMPSHIRE
-	-	-	-	42.09	41.35	28.89	10.37	251	Basingstoke & Deane
-	64	-	-	28.28	27.20	18.57	6.69	244	East Hampshire
-	-	-	-	15.15	13.57	17.86	6.77	499	Eastleigh
-	-	-	34	13.50	11.75	14.79	5.44	463	Fareham
-	-	-	-	23.70	20.89	16.89	6.36	296	Gosport
-	-	-	-	22.86	20.34	17.88	5.94	292	Hart
-	-	-	-	29.36	27.44	20.24	7.53	275	Havant
-	-	-	-	32.80	29.86	19.46	7.89	262	New Forest
-	-	104	-	23.24	18.18	16.15	5.74	316	Portsmouth
-	-	152	-	32.71	20.15	26.15	8.01	354	Rushmoor
-	-	-	154	29.27	22.72	18.20	6.82	300	Southampton
-	-	-	97	39.16	35.52	28.11	9.66	269	Test Valley
-	-	-	120	33.96	30.38	19.21	6.92	228	Winchester

Local Authority	POPULATION & AREA			NUMBER OF HEREDITAMENTS				WASTE COLLECTED – BY WEIGHT				
											% OF TOTAL WASTE COLLECTED BY CONTRACTORS	
	Population at 30.6.83	Area	Density of population at 30.6.83	Domestic	Commercial	Industrial	Other	Total weight of all waste	Actual or estimated weight of all waste	Estimated % of waste weighed	Routine collections	Abnormal circumstances
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	'000	hectares	per hectare					tonnes		%	%	%
NON-MET DISTRICTS-ENGLAND												
HEREFORD AND WORCESTER												
Bromsgrove	88.2	21,974	4.01	31,807	4,809	139	759	**	**	**	-	-
Hereford	47.8	2,036	23.48	18,195	4,118	60	333	11,900	E	2	-	-
Leominster	37.4	93,155	0.40	14,882	1,925	95	766	13,000	E	-	-	-
Malvern Hills	85.5	90,242	0.95	32,957	3,999	202	1,225	30,000	E	30	5	-
Redditch	70.5	5,427	12.99	25,875	4,997	488	345	20,100	E	35	4	-
South Herefordshire	46.9	90,453	0.52	17,805	1,884	141	883	12,330	E	-	1	-
Worcester	76.0	3,181	23.89	28,817	5,220	184	500	20,743	A	100	-	-
Wychavon	95.9	66,612	1.44	36,347	5,925	228	1,108	**	**	-	-	-
Wyre Forest	92.2	19,570	4.71	35,213	5,136	243	767	20,000	E	2	-	-
HERTFORDSHIRE												
Broxbourne	79.7	5,225	15.25	29,243	6,829	196	477	21,319	A	100	-	-
Dacorum	132.3	21,003	6.30	48,943	14,343	229	748	33,306	A	92	-	-
East Hertfordshire	113.7	47,719	2.38	40,533	8,642	305	979	31,896	A	92	-	-
Hertsmere												
North Hertfordshire	109.6	37,368	2.93	40,704	10,026	319	808	28,548	E	8	-	-
St Albans	126.6	16,126	7.85	45,838	10,397	253	770	31,243	A	100	-	-
Stevenage	75.7	2,532	29.90	27,027	10,744	95	250	20,540	E	90	-	-
Three Rivers	79.3	8,752	9.06	27,938	5,006	108	427	18,589	A	100	3	-
Watford	73.9	2,144	35.40	27,824	6,255	289	330	26,122	A	100	-	-
Welwyn Hatfield	94.2	12,765	7.38	35,014	10,512	174	571	24,000	E	10	-	-
HUMBERSIDE												
Beverley	107.3	40,436	2.65	40,279	3,766	134	667	39,000	E	60	-	-
Boothferry												
Cleethorpes	68.6	16,422	4.18	25,683	2,503	67	543	26,020	E	85	-	-
East Yorkshire	76.2	104,367	0.73	31,273	4,217	154	941	20,000	E	20	-	-
Glanford	67.4	57,985	1.16	25,615	2,729	91	574	21,205	E	6	-	-
Great Grimsby	92.4	2,805	32.94	34,235	5,917	290	553	32,662	E	81	-	-
Holderness	47.0	54,036	0.87	18,316	2,038	42	552	15,000	E	-	-	-
Kingston-upon-Hull	269.1	7,101	37.90	105,339	17,310	684	1,371	**	**	**	-	-
Scunthorpe	65.0	3,376	19.25	24,431	3,646	75	324	25,000	E	80	-	-
ISLE OF WIGHT												
Medina	68.0	11,715	5.80	28,039	4,601	135	1,048	19,186	E	50	-	-
South Wight	51.8	26,351	1.97	21,350	3,476	73	870	19,000	E	30	-	-
KENT												
Ashford	87.8	58,054	1.51	33,600	7,298	173	724	22,440	E	20	-	-
Canterbury	123.8	31,056	3.99	47,914	7,976	143	993	43,140	E	5	-	-
Dartford	77.2	6,988	11.05	27,987	4,166	198	371	23,197	A	100	-	-
Dover	102.8	31,195	3.30	39,738	6,444	170	914	26,000	E	-	-	-
Gillingham	94.1	3,240	29.04	34,504	6,814	94	363	21,000	E	**	-	-
Gravesham	95.6	10,005	9.56	34,968	6,019	91	404	28,050	E	-	-	-
Maidstone	131.3	39,449	3.33	47,701	8,448	186	1,116	39,743	A	100	-	-
Rochester upon Medway	146.2	15,997	9.14	52,861	10,357	208	769	46,500	E	40	-	-
Sevenoaks												
Shepway	86.8	35,691	2.43	36,243	6,814	143	835	22,100	E	30	-	-
Swale	110.2	36,903	2.99	43,761	7,341	269	846	**	**	**	**	**
Thanet	121.4	10,315	11.77	49,915	8,478	152	915	45,566	A	100	-	-
Tonbridge & Malling	99.3	24,020	4.13	35,494	5,703	158	579	28,172	E	92	-	-
Tunbridge Wells	98.6	33,035	2.98	36,773	6,595	84	1,023	37,960	E	11	-	-
LANCASHIRE												
Blackburn	142.2	13,723	10.36	53,982	10,265	604	946	40,600	E	-	-	-
Blackpool	146.4	3,498	41.85	56,265	12,531	298	697	56,700	E	74	-	-
Burnley	92.2	11,758	7.84	36,897	6,313	358	613	30,875	E	86	-	-
Chorley	91.5	20,490	4.47	34,792	3,804	152	530	26,800	E	2	-	-
Fylde	69.2	16,501	4.19	27,412	4,268	131	607	19,567	A	100	-	-
Hyndburn	78.9	7,315	10.79	31,400	5,561	351	471	24,400	E	-	2	-
Lancaster	126.8	57,671	2.20	47,285	6,792	164	1,435	36,500	E	-	-	-
Pendle	85.2	16,817	5.07	35,259	7,655	403	628	30,000	E	-	1	-
Preston	125.2	14,239	8.79	48,404	7,027	162	852	36,900	A	98	-	-
Ribble Valley	51.8	57,917	0.89	18,612	2,737	130	625	16,840	E	30	-	-
Rossendale	64.2	13,811	4.65	25,927	3,990	413	569	21,500	E	-	*	-
South Ribble	98.0	11,109	8.82	36,623	2,977	150	460	26,600	E	50	-	-
West Lancashire	107.6	33,165	3.24	38,948	4,451	299	627	31,850	E	-	-	-
Wyre	98.4	28,332	3.47	39,444	4,036	337	800	**	**	**	-	-

WASTE COLLECTED – BY TYPE			WASTE COLLECTED – BY METHOD OF STORAGE				METHODS OF COLLECTION						
							HOUSEHOLD WASTE						
Household waste (13)	Commercial waste (14)	Industrial waste (15)	Contained in dustbins (16)	Contained in disposable sacks (17)	Contained in bulk storage containers (18)	Other (19)	Backdoor collect & return (20)	Kerbside (21)	Other collect & return (22)	Skep (23)	Other normal methods (24)	Special collections (25)	Local Authority
%	%	%	%	%	%	%	%	%	%	%	%	%	
													NON-MET DISTRICTS–ENGLAND
													HEREFORD AND WORCESTER
**	**	**	**	**	**	**	98	-	-	-	-	2	Bromsgrove
75	25	-	75	-	25	-	100	-	-	-	-	-	Hereford
90	10	-	-	100	-	-	85	15	-	-	-	-	Leominster
90	10	-	75	25	-	-	70	-	-	30	-	-	Malvern Hills
88	12	-	-	79	-	21	97	-	-	-	-	3	Redditch
92	6	2	10	80	-	10	92	-	8	-	-	-	South Herefordshire
88	12	-	83	5	11	1	23	6	-	69	2	-	Worcester
91	9	-	28	70	2	-	100	-	-	-	-	-	Wychavon
90	9	1	93	2	5	-	2	-	-	92	3	3	Wyre Forest
													HERTFORDSHIRE
88	2	10	-	91	9	-	-	100	-	-	-	-	Broxbourne
80	12	8	-	82	16	2	100	-	-	-	-	-	Dacorum
92	8	-	-	97	3	-	80	-	-	-	18	2	East Hertfordshire
													Hertsmere
85	15	-	-	83	11	6	100	-	-	-	-	-	North Hertfordshire
86	13	1	-	92	8	-	90	2	-	-	6	2	St Albans
79	21	-	-	55	40	5	80	-	-	-	5	15	Stevenage
93	-	7	1	84	14	1	99	-	-	-	-	1	Three Rivers
74	26	-	81		19	-	97	-	-	-	3	-	Watford
80	20	-	80	-	20	-	-	-	-	90	5	5	Welwyn Hatfield
													HUMBERSIDE
80	20	-	6	80	13	1	100	-	-	-	-	-	Beverley
													Boothferry
86	14	-	-	73	10	17	75	-	-	-	10	15	Cleethorpes
90	7	3	-	90	10	-	100	-	-	-	-	-	East Yorkshire
76	24	-	-	77	21	2	97	-	-	-	-	3	Glanford
81	18	1	66	-	14	20	27	-	-	27	22	24	Great Grimsby
90	8	2	97	3	-	-	100	-	-	-	-	-	Holderness
94	6	-	**	-	**	-	94	-	-	-	-	6	Kingston-upon-Hull
90	10	-	63	5	12	20	95	-	-	-	-	5	Scunthorpe
													ISLE OF WIGHT
80	20	-	90	10	-	-	80	10	-	-	-	10	Medina
85	14	1	65	30	5	-	70	2	1	25	1	1	South Wight
													KENT
94	6		48	2	4	46	1	-	96	-	1	2	Ashford
86	10	4	-	78	12	10	5	83	-	-	-	12	Canterbury
72	20	8	5	72	10	13	-	28	-	-	70	2	Dartford
97	3	-	85	10	5	-	10	88	-	-	-	2	Dover
85	10	5	50	30	15	5	-	50	35	-	10	5	Gillingham
92	8	-	-	99	1	-	92	-	-	-	8	-	Gravesham
81	19	-	12	59	21	8	83	-	-	10	6	1	Maidstone
95	5	-	75	20	5	-	-	96	-	-	-	4	Rochester upon Medway
													Sevenoaks
96	4	-	-	84	16	-	-	94	-	-	5	1	Shepway
**	**	**	**	**	**	**	**	**	**	**	**	**	Swale
94	6	-	85	12	3	-	51	1	24	16	4	4	Thanet
90	10	-	-	90	10	-	-	-	78	-	19	3	Tonbridge & Malling
92	7	1	74	4	15	7	-	-	-	98	-	2	Tunbridge Wells
													LANCASHIRE
91	8	1	-	80	15	5	-	-	100	-	-	-	Blackburn
70	30	-	66	20	14	-	84	-	-	-	14	2	Blackpool
90	9	1	40	43	3	14	82	-	-	-	3	15	Burnley
93	6	1	87	-	8	5	98	-	-	-	-	2	Chorley
80	20	-	68	11	16	5	82	-	-	-	10	8	Fylde
87	13	-	50	37	2	11	96	-	-	-	-	4	Hyndburn
83	16	1	-	87	10	3	98	-	-	-	1	1	Lancaster
87	10	3	-	92	3	5	100	-	-	-	-	-	Pendle
80	17	3	72	7	5	16	90	8	-	-	-	2	Preston
95	4	1	75	25	-	-	99	-	-	-	-	1	Ribble Valley
90	9	1	70	20	-	10	95	-	-	-	-	5	Rossendale
83	15	2	83	-	17	-	100	-	-	-	-	-	South Ribble
91	8	1	-	88	-	12	76	-	22	-	-	2	West Lancashire
**	**	**	**	**	**	**	**	**	**	**	**	**	Wyre

Local Authority	METHODS OF COLLECTION: COMMERCIAL WASTE: Backdoor collect & return (26)	Kerbside (27)	Other collect & return (28)	Skip (29)	Other normal methods (30)	Special collections (31)	Collection system (See Notes) (32)	NUMBER OF DISPOSABLE SACKS USED: Paper (33)	Plastic (34)
	%	%	%	%	%	%		'000	'000
NON-MET DISTRICTS-ENGLAND									
HEREFORD AND WORCESTER									
Bromsgrove	100	-	-	-	-	-	T	-	-
Hereford	100	-	-	-	-	-	T	-	-
Leominster	90	10	-	-	-	-	T	-	950
Malvern Hills	80	10	10	-	-	-	T	-	800
Redditch	20	-	-	-	80	-	T	-	2,300
South Herefordshire	100	-	-	-	-	-	T	-	1,105
Worcester	-	-	-	50	50	-	T	-	-
Wychavon	100	-	-	-	-	-	T	-	1,920
Wyre Forest	-	-	-	30	65	5	T	-	32
HERTFORDSHIRE									
Broxbourne	-	84	-	-	12	4	T	-	2,360
Dacorum	33	-	-	-	60	7	T	-	2,280
East Hertfordshire	18	70	-	-	-	12	T	-	2,586
Hertsmere									
North Hertfordshire	75	-	-	-	25	-	B	-	2,800
St Albans	93	-	-	-	6	1	T	-	4,350
Stevenage	40	-	-	-	55	5	T	-	2,048
Three Rivers	38	-	-	-	60	2	T	-	2,140
Watford	-	-	-	-	100	-	T	-	-
Welwyn Hatfield	-	-	-	15	80	5	T	-	-
HUMBERSIDE									
Beverley	100	-	-	-	-	-	C	-	3,600
Boothferry									
Cleethorpes	27	-	-	-	61	12	T	-	1,884
East Yorkshire	100	-	-	-	-	-	T	-	2,000
Glanford	13	-	-	-	87	-	T	-	2,187
Great Grimsby	14	-	-	15	68	3	T	-	-
Holderness	100	-	-	-	-	-	T	-	50
Kingston-upon-Hull	60	-	-	-	40	-	B	-	-
Scunthorpe	97	-	-	-	-	3	T	-	90
ISLE OF WIGHT									
Medina	-	100	-	-	-	-	T	-	50
South Wight	70	15	-	10	-	5	T	-	116
KENT									
Ashford	3	24	-	-	71	-	T	-	60
Canterbury	-	80	-	-	20	-	T	-	4,925
Dartford	66	-	-	34	-	-	T	-	2,162
Dover	10	90	-	-	-	-	T	-	515
Gillingham	-	60	20	-	20	-	T	-	40
Gravesham	50	-	-	-	50	-	T	-	31
Maidstone	10	-	-	-	89	1	T	-	4,441
Rochester upon Medway	-	100	-	-	-	-	T	372	85
Sevenoaks									
Shepway	-	95	-	5	-	-	T	-	2,500
Swale	**	**	**	**	**	**	**	**	**
Thanet	34	8	50	-	8	-	B	-	30
Tonbridge & Malling	-	-	-	100	-	-	T	-	2,590
Tunbridge Wells	40	20	-	10	30	-	B	-	44
LANCASHIRE									
Blackburn	-	-	100	-	-	-	T	-	4,600
Blackpool	86	-	-	-	13	1	B	-	975
Burnley	55	-	-	-	15	30	B	-	1,450
Chorley	100	-	-	-	-	-	T	-	36
Fylde	65	-	-	-	30	5	B	-	-
Hyndburn	87	-	-	-	13	-	T	-	369
Lancaster	60	-	-	-	40	-	T	-	4,000
Pendle	78	-	-	-	21	1	T	-	2,835
Preston	75	20	3	-	-	2	T	-	350
Ribble Valley	100	-	-	-	-	-	T	-	340
Rossendale	100	-	-	-	-	-	T	37	750
South Ribble	100	-	-	-	-	-	B	-	68
West Lancashire	2	68	30	-	-	-	T	-	3,120
Wyre	**	**	**	**	**	**	T	**	**

NUMBER OF BULK STORAGE CONTAINERS		PROVISION OF DUSTBINS/ SACKHOLDERS		FREQUENCY OF COLLECTION PER WEEK						
				NORMAL HOUSEHOLD WASTE			COMMERCIAL WASTE			
With compaction (35)	Without compaction (36)	Charge (See Notes) (37)	Number (38)	Twice or more (39)	Once (40)	Less than once (41)	Twice or more (42)	Once (43)	Less than once (44)	Local Authority
				%	%	%	%	%	%	
										NON-MET DISTRICTS-ENGLAND
										HEREFORD AND WORCESTER
-	**	N	101	-	100	-	-	100	-	Bromsgrove
-	207	N	-	-	100	-	15	85	-	Hereford
-	-	N	-	-	57	43	-	95	5	Leominster
-	-	N	20	-	85	15	20	60	20	Malvern Hills
-	-	F	1,072	-	100	-	27	73	-	Redditch
-	-	N	8	**	**	**	1	99	-	South Herefordshire
-	300	N	-	-	100	-	40	60	-	Worcester
-	-	C	-	-	100	-	-	100	-	Wychavon
-	-	C	187	-	100	-	3	97	-	Wyre Forest
										HERTFORDSHIRE
5,252	-	N	-	-	100	-	-	100	-	Broxbourne
-	1,209	N	-	-	100	-	33	60	7	Dacorum
-	221	N	-	-	100	-	1	99	-	East Hertfordshire
										Hertsmere
-	199	F	308	-	100	-	10	90	-	North Hertfordshire
-	360	N	-	4	96	-	5	95	-	St Albans
-	280	N	-	-	100	-	38	62	-	Stevenage
-	492	N	-	-	100	-	45	55	-	Three Rivers
-	850	C	-	-	100	-	17	83	-	Watford
-	300	N	1,132	-	100	-	50	50	-	Welwyn Hatfield
										HUMBERSIDE
-	230	N	-	-	100	-	10	90	-	Beverley
										Boothferry
-	504	C	6	1	99	-	16	84	-	Cleethorpes
-	1,055	C	**	-	100	-	10	90	-	East Yorkshire
-	65	C	51	-	100	-	2	98	-	Glanford
-	362	F	2,685	-	100	-	7	83	10	Great Grimsby
-	-	N	-	-	100	-	10	90	-	Holderness
-	-	N	-	-	100	-	35	60	5	Kingston-upon-Hull
-	280	N	-	-	100	-	10	90	-	Scunthorpe
										ISLE OF WIGHT
-	-	N	-	-	100	-	80	20	-	Medina
-	13	F	10	-	98	2	15	85	-	South Wight
										KENT
-	92	C	-	-	100	-	70	30	-	Ashford
-	53	N	-	5	95	-	10	90	-	Canterbury
1	54	N	-	-	100	-	3	97	-	Dartford
-	100	N	-	-	100	-	10	90	-	Dover
-	120	N	12	-	100	-	5	95	-	Gillingham
-	500	C	-	-	100	-	10	90	-	Gravesham
2	1,487	C	104	-	100	-	15	85	-	Maidstone
-	250	N	-	-	100	-	40	60	-	Rochester upon Medway
										Sevenoaks
-	-	N	-	-	100	-	5	95	-	Shepway
**	**	**	**	**	**	**	**	**	**	Swale
-	376	N	-	-	100	-	12	88	-	Thanet
-	800	N	-	-	100	-	10	90	-	Tonbridge & Malling
-	325	N	-	-	100	-	-	100	-	Tunbridge Wells
										LANCASHIRE
9	390	F	2,600	-	100	-	5	94	1	Blackburn
-	1,320	C	-	-	100	-	20	80	-	Blackpool
1	110	C	84	5	95	-	55	45	-	Burnley
1	370	C	-	-	100	-	-	100	-	Chorley
-	414	C	244	-	100	-	10	90	-	Fylde
1	-	C	613	-	100	-	4	96	-	Hyndburn
-	695	C	-	-	100	-	20	80	-	Lancaster
-	144	C	84	-	98	2	25	75	-	Pendle
-	450	C	-	-	100	-	20	80	-	Preston
-	-	N	-	-	100	-	-	100	-	Ribble Valley
-	-	F	2,990	-	95	5	15	85	-	Rossendale
-	770	C	-	-	100	-	5	95	-	South Ribble
-	-	C	70	-	100	-	-	100	-	West Lancashire
**	**	C	**	**	**	**	**	**	**	Wyre

Local Authority	NUMBER OF BOTTLE BANKS		WASTE OIL COLLECTION POINTS		AMOUNT OF WASTE				
	Owned & operated by the local authority (45)	Other (46)	Owned & operated by the local authority (47)	Other (e.g. garages) (48)	Paper (49)	Abandoned Vehicles (50)	Glass (51)	Oil (52)	Ferrous Metals (53)
					tonnes	no.	tonnes	'000 litres	tonnes
NON-MET DISTRICTS-ENGLAND									
HEREFORD AND WORCESTER									
Bromsgrove	-	-	-	-	-	-	-	-	-
Hereford	1	3	-	-	-	-	95	-	-
Leominster	1	-	-	-	-	33	48	-	-
Malvern Hills	-	-	-	-	-	-	-	-	-
Redditch	-	-	-	1	-	20	-	1	-
South Herefordshire	-	-	-	-	-	-	-	-	-
Worcester	-	11	-	-	-	-	-	-	-
Wychavon	4	-	-	-	-	25	46	-	-
Wyre Forest	6	-	-	-	222	-	315	-	-
HERTFORDSHIRE									
Broxbourne	-	14	-	**	-	-	**	**	-
Dacorum	5	22	3	-	259	83	535	19	195
East Hertfordshire	-	7	1	1	-	31	503	-	-
Hertsmere									
North Hertfordshire	-	9	1	-	-	106	666	2	-
St Albans	-	18	2	-	-	228	650	3	-
Stevenage	-	20	-	-	-	226	325	-	-
Three Rivers	5	15	-	-	-	126	512	-	-
Watford	-	-	1	-	-	40	-	6	-
Welwyn Hatfield	-	11	-	-	-	81	551	-	-
HUMBERSIDE									
Beverley	-	-	-	-	-	5	-	-	-
Boothferry									
Cleethorpes	-	7	-	-	455	70	91	-	-
East Yorkshire	-	-	-	-	-	45	-	-	-
Glanford	-	21	-	-	41	42	80	-	-
Great Grimsby	-	27	1	-	-	48	172	4	-
Holderness	-	5	-	-	-	17	-	-	-
Kingston-upon-Hull	-	30	-	-	468	-	-	-	-
Scunthorpe	-	-	-	-	-	-	-	-	-
ISLE OF WIGHT									
Medina	-	-	-	-	-	34	-	-	-
South Wight	-	-	-	-	-	60	-	-	-
KENT									
Ashford	-	4	-	-	-	170	169	-	-
Canterbury	-	4	-	-	-	84	300	-	-
Dartford	-	6	-	-	-	80	159	-	-
Dover	-	9	-	-	-	25	39	-	-
Gillingham	1	1	-	1	-	70	216	-	-
Gravesham	2	-	-	1	-	160	360	-	-
Maidstone	5	-	-	-	-	33	364	-	-
Rochester upon Medway	3	-	-	-	-	60	194	-	-
Sevenoaks									
Shepway	-	27	1	-	1,101	110	150	2	30
Swale	**	**	**	**	**	**	**	**	**
Thanet	-	-	-	2	-	98	-	5	-
Tonbridge & Malling	-	9	-	-	-	10	188	-	-
Tunbridge Wells	-	12	-	-	-	94	-	-	-
LANCASHIRE									
Blackburn	3	-	-	-	-	121	84	-	-
Blackpool	-	2	-	-	-	-	-	-	-
Burnley	-	1	1	11	-	95	-	5	-
Chorley	4	-	-	9	-	-	**	-	-
Fylde	-	2	-	-	-	17	99	-	-
Hyndburn	-	-	-	8	-	29	-	-	-
Lancaster	-	17	-	10	-	57	457	-	-
Pendle	4	-	-	**	-	85	126	-	-
Preston	-	2	-	-	-	30	100	-	-
Ribble Valley	1	-	-	-	-	11	60	-	-
Rossendale	1	3	-	-	14	-	90	-	-
South Ribble	9	2	-	21	-	45	569	2	-
West Lancashire	10	-	-	-	-	305	42	-	-
Wyre	**	**	**	**	**	**	**	**	**

RECLAIMED		NUMBER OF LOCAL AUTHORITY'S COLLECTION VEHICLES				NUMBER OF CONTRACTORS' COLLECTION VEHICLES				
		SPECIALIST				SPECIALIST				
Non-Ferrous Metals (54)	Other (55)	With compaction (56)	Without compaction (57)	General purpose (58)	Total (59)	With compaction (60)	Without compaction (61)	General purpose (62)	Total (63)	Local Authority
tonnes	tonnes									
										NON-MET DISTRICTS-ENGLAND
										HEREFORD AND WORCESTER
-	-	13	1	1	15	-	-	-	-	Bromsgrove
-	-	8	-	-	8	-	-	-	-	Hereford
-	-	6	-	-	6	-	-	-	-	Leominster
-	-	13	-	-	13	-	-	2	2	Malvern Hills
-	-	8	-	1	9	-	1	-	1	Redditch
-	-	11	-	-	11	-	1	-	1	South Herefordshire
-	-	11	-	-	11	-	-	-	-	Worcester
-	-	17	-	1	18	-	-	-	-	Wychavon
-	-	17	1	1	19	-	-	-	-	Wyre Forest
										HERTFORDSHIRE
-	-	11	-	-	11	-	-	-	-	Broxbourne
1	9	21	-	1	22	-	-	-	-	Dacorum
-	-	13	2	-	15	-	-	-	-	East Hertfordshire
										Hertsmere
-	-	18	-	3	21	-	-	-	-	North Hertfordshire
-	-	17	2	1	20	-	-	-	-	St Albans
-	-	8	2	-	10	-	-	-	-	Stevenage
-	-	14	1	1	16	**	**	**	**	Three Rivers
-	-	15	2	1	18	-	-	-	-	Watford
-	-	15	-	1	16	-	-	-	-	Welwyn Hatfield
										HUMBERSIDE
-	-	17	-	1	18	-	-	-	-	Beverley
										Boothferry
-	-	15	2	-	17	-	-	-	-	Cleethorpes
-	-	17	-	1	18	-	-	-	-	East Yorkshire
-	-	10	-	2	12	-	-	-	-	Glanford
-	-	15	-	2	17	-	-	-	-	Great Grimsby
-	-	14	-	-	14	-	-	-	-	Holderness
-	-	58	9	15	82	-	-	-	-	Kingston-upon-Hull
-	-	14	1	3	18	-	-	-	-	Scunthorpe
										ISLE OF WIGHT
-	-	12	-	3	15	-	-	-	-	Medina
-	-	13	-	1	14	-	-	-	-	South Wight
										KENT
-	-	12	-	2	14	-	-	-	-	Ashford
-	-	16	2	5	23	-	-	-	-	Canterbury
-	-	8	2	1	11	-	-	-	-	Dartford
-	-	12	-	1	13	-	-	-	-	Dover
-	-	9	-	1	10	-	-	-	-	Gillingham
-	-	12	-	1	13	-	-	-	-	Gravesham
-	-	18	2	2	22	-	-	-	-	Maidstone
-	-	11	5	10	26	-	-	-	-	Rochester upon Medway
										Sevenoaks
170	-	8	-	2	10	-	-	-	-	Shepway
**	**	**	**	**	**	**	**	**	**	Swale
-	-	20	-	1	21	-	-	-	-	Thanet
-	-	15	-	-	15	-	-	-	-	Tonbridge & Malling
-	-	19	-	1	20	-	-	-	-	Tunbridge Wells
										LANCASHIRE
-	-	19	1	4	24	-	-	-	-	Blackburn
-	-	32	-	1	33	-	-	-	-	Blackpool
-	-	13	1	4	18	-	-	-	-	Burnley
-	-	16	-	4	20	-	-	-	-	Chorley
-	-	13	-	1	14	-	-	-	-	Fylde
-	-	9	4	-	13	**	**	**	**	Hyndburn
-	-	19	-	-	19	-	-	-	-	Lancaster
-	-	13	-	3	16	**	**	**	**	Pendle
-	-	16	1	3	20	-	-	-	-	Preston
-	-	13	3	1	17	-	-	-	-	Ribble Valley
-	-	15	2	2	19	**	**	**	**	Rossendale
-	-	18	-	-	18	-	-	-	-	South Ribble
-	-	18	-	-	18	-	-	-	-	West Lancashire
**	**	**	**	**	**	-	-	-	-	Wyre

Local Authority	LOCAL AUTHORITY STAFF EMPLOYED AT 31.3.84								EXPENDITURE			
	Drivers (64)	Loaders (65)	Drivers/ Loaders (66)	Other manual (67)	Vehicle maintenance (68)	Technical & administrative (69)	Total (70)	Contractors' manual employees (71)	Employees (72)	Premises/ depots (73)	Provision of disposable sacks (74)	Provision of dustbins (75)
	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	£	£	£	£
NON-MET DISTRICTS-ENGLAND												
HEREFORD AND WORCESTER												
Bromsgrove	8	37	3	-	1	2	51	-	457,341	25,518	-	610
Hereford	4	23	2	-	2	1	32	-	314,619	4,673	282	-
Leominster	5	16	-	-	-	-	21	-	144,165	7,164	22,550	-
Malvern Hills	2	33	11	-	4	3	53	4	413,857	32,603	26,001	-
Redditch	6	22	-	-	2	1	31	*	307,527	-	60,853	4,103
South Herefordshire	9	18	3	-	-	1	31	*	239,863	12,830	25,693	50
Worcester	-	26	11	-	2	-	39	-	341,175	6,041	-	-
Wychavon	1	47	13	-	2	2	65	-	557,863	27,368	73,076	-
Wyre Forest	-	37	11	4	-	5	57	-	447,887	33,953	-	-
HERTFORDSHIRE												
Broxbourne	8	17	-	-	2	4	31	-	301,668	19,700	76,308	-
Dacorum	-	33	34	1	4	3	77	-	482,870	334,791	74,341	-
East Hertfordshire	-	29	21	-	1	3	54	-	347,441	-	74,149	-
Hertsmere												
North Hertfordshire	-	39	33	-	3	4	79	-	529,535	19,440	69,414	-
St Albans	-	31	27	-	2	4	64	-	493,384	9,852	95,901	-
Stevenage	-	12	14	-	3	3	32	-	263,011	37,140	81,310	-
Three Rivers	-	26	18	1	-	4	49	**	437,385	20,896	59,867	-
Watford	-	27	22	3	4	-	56	-	485,912	11,936	15,004	-
Welwyn Hatfield	-	22	24	-	4	3	53	-	487,236	50,470	1,562	-
HUMBERSIDE												
Beverley	11	54	7	-	3	5	80	-	512,156	-	111,284	-
Boothferry												
Cleethorpes	-	34	13	1	4	3	55	-	423,657	18,233	46,022	859
East Yorkshire	12	37	-	-	2	4	55	-	430,934	389	73,571	-
Glanford	10	17	4	-	2	2	35	-	269,090	3,052	38,569	-
Great Grimsby	11	47	3	9	2	2	74	-	575,236	11,063	-	16,155
Holderness	-	26	11	-	1	-	38	-	325,486	47,265	2,119	-
Kingston-upon-Hull	72	149	-	3	4	17	245	-	1,683,549	144,030	-	-
Scunthorpe	10	37	8	-	2	1	58	-	411,815	25,948	3,217	-
ISLE OF WIGHT												
Medina	8	30	1	-	-	1	40	-	328,110	10,051	-	-
South Wight	-	22	12	-	-	3	37	-	280,414	5,098	4,635	-
KENT												
Ashford	-	23	12	-	2	2	39	-	328,741	10,302	7,203	6,618
Canterbury	-	20	16	2	3	4	45	-	376,731	38,492	135,165	-
Dartford	10	21	-	4	-	-	35	-	222,304	3,138	83,638	-
Dover	-	19	9	-	1	2	31	-	244,121	35,885	15,818	-
Gillingham	7	14	-	-	2	3	26	-	238,262	12,116	-	-
Gravesham	7	27	3	-	1	1	39	-	338,169	6,930	77,688	58
Maidstone	19	48	1	3	4	5	80	-	635,876	32,918	132,432	-
Rochester upon Medway	12	33	1	-	2	7	55	-	410,905	7,123	60,259	-
Sevenoaks												
Shepway	6	13	-	9	3	3	34	-	189,283	26,861	100,309	-
Swale	**	**	**	**	**	**	**	**	396,082	-	100,438	-
Thanet	1	39	14	-	2	3	59	-	385,536	57,819	1,500	-
Tonbridge & Malling	11	31	2	-	6	2	52	-	465,072	28,583	83,855	-
Tunbridge Wells	-	38	19	-	4	3	64	-	487,204	1,864	11,288	-
LANCASHIRE												
Blackburn	-	67	24	-	-	8	99	-	835,204		153,946	
Blackpool	-	76	21	-	-	-	97	-	889,631	11,973	36,058	-
Burnley	10	41	5	-	3	4	63	-	464,931	37,739	41,868	2,707
Chorley	-	51	16	-	1	5	73	-	523,860	18,370	3	1,040
Fylde	15	32	-	-	4	3	54	-	399,468	10,885	500	1,908
Hyndburn	7	31	4	-	-	4	46	**	539,773	28,867	12,017	2,884
Lancaster	2	55	16	-	4	4	81	-	599,256	23,045	132,172	-
Pendle	7	30	4	-	3	3	47	**	496,828	55,258	77,761	385
Preston	22	55	-	-	-	8	85	-	572,519	7,020	14,150	-
Ribble Valley	-	29	17	2	3	-	51	-	355,655	8,990	16,279	-
Rossendale	4	33	10	-	-	-	47	**	407,885	20,931	28,312	11,871
South Ribble	13	48	4	-	6	6	77	-	596,121	17,041	652	-
West Lancashire	13	51	2	-	4	4	74	-	532,631	8,765	124,149	405
Wyre	**	**	**	**	**	**	**	-	368,193	18,802	94,632	6,996

EXPENDITURE						INCOME			
			AGENCY SERVICES			COLLECTION SERVICES			
Transport & moveable plant (76)	Establishment expenses (77)	Other running expenses (78)	Other local authorities (79)	Contractors (80)	Gross Expenditure (81)	Commercial waste (82)	Bulky household waste (83)	Other (84)	Local Authority
£	£	£	£	£	£	£	£	£	
									NON-MET DISTRICTS-ENGLAND
									HEREFORD AND WORCESTER
184,571	36,495	17,137	-	-	721,672	31,396	1,636	3,385	Bromsgrove
58,080	18,162	11,429	-	-	407,245	42,260	-	-	Hereford
51,496	1,644	619	-	-	227,638	2,834	-	-	Leominster
156,008	14,340	431	-	48,844	692,104	13,578	1,885	-	Malvern Hills
142,170	33,264	-	-	15,777	563,694	36,028	2,093	15,777	Redditch
103,677	3,401	1,559	-	6,344	393,417	9,275	-	-	South Herefordshire
127,932	73,350	10,381	-	-	558,879	56,478	-	-	Worcester
238,706	4,917	10,716	-	-	912,646	13,687	580	-	Wychavon
175,600	13,030	8,032	-	-	678,502	42,043	-	685	Wyre Forest
									HERTFORDSHIRE
153,964	17,631	-	-	-	569,271	35,988	831	1,334	Broxbourne
257,181	95,617	4,297	-	-	1,249,097	142,600	5,320	4,008	Dacorum
155,085	79,240	3,676	-	-	659,591	35,082	17,746	3,376	East Hertfordshire
									Hertsmere
189,323	78,127	18,840	-	-	904,699	9,778	2,042	53,790	North Hertfordshire
201,711	58,810	13,380	-	-	873,038	107,731	2,225	-	St Albans
175,725	85,757	36,853	-	-	679,804	132,088	1,813	-	Stevenage
215,243	44,143	3,261	8,085	-	788,880	37,108	13,163	642	Three Rivers
246,610	80,393	9,575	99,890	-	949,520	155,430	-	6,998	Watford
307,404	78,650	668	-	-	925,990	52,818	4,560	65	Welwyn Hatfield
									HUMBERSIDE
321,071	49,215	1,045	11,271	-	1,006,042	50,037	-	1,796	Beverley
									Boothferry
120,016	11,686	9,966	-	-	630,439	41,832	436	-	Cleethorpes
174,348	100,862	14,854	-	-	794,958	79,765	557	2,929	East Yorkshire
161,481	20,860	11,127	-	-	504,179	33,713	-	-	Glanford
209,145	25,711	6,516	14,323	1,115	859,264	55,391	2,369	14,192	Great Grimsby
153,069	5,192	718	-	-	533,849	-	-	9,236	Holderness
617,486	244,251	14,273	-	-	2,705,589	138,775	1,232	4,256	Kingston-upon-Hull
217,793	4,221	10,504	-	-	673,498	50,113	-	5,025	Scunthorpe
									ISLE OF WIGHT
93,857	35,969	28,013	-	-	496,000	17,652	1,370	-	Medina
102,202	39,590	34,793	-	-	466,732	16,773	4,288	2,399	South Wight
									KENT
161,559	52,595	6,537	-	-	573,757	30,781	-	-	Ashford
234,392	119,213	30,888	-	-	934,901	71,137	16,236	13,806	Canterbury
140,352	89,048	8,553	19,883	950	567,866	56,778	1,289	-	Dartford
174,430	30,803	-	6,757	-	507,814	22,730	-	-	Dover
100,351	30,370	9,694	-	-	390,793	31,030	7,078	-	Gillingham
160,649	61,990	11,289	-	302	657,275	39,342	1,239	62	Gravesham
262,334	46,620	8,478	-	-	1,118,658	132,823	1,738	53,647	Maidstone
181,770	58,102	5,957	20,986	372	745,674	61,178	9,764	12	Rochester upon Medway
									Sevenoaks
291,749	7	20,936	15,961	-	645,126	79,276	1,535	5,169	Shepway
190,025	29,337	15,910	8,679	-	740,471	27,091	622	-	Swale
383,373	52,324	3,659	16,485	-	902,696	53,898	6,053	461	Thanet
223,215	72,829	5,737	-	260	879,551	58,824	865	306	Tonbridge & Malling
260,188	64,353	9,475	-	-	834,372	78,075	1,336	8,816	Tunbridge Wells
									LANCASHIRE
274,502	65,900	958	-	-	1,330,510	72,951	-	11,397	Blackburn
186,467	252,234	9,053	-	-	1,385,436	216,670	9,568	18	Blackpool
149,605	147,495	2,031	-	-	846,376	37,129	16,808	5,983	Burnley
236,292	97,813	6,412	-	-	883,790	29,026	4,922	-	Chorley
144,806	23,366	1,882	-	-	582,815	63,609	1,163	-	Fylde
140,167	6,939	2,516	-	-	733,163	40,491	-	12,004	Hyndburn
213,730	114,719	18,177	-	-	1,101,099	81,441	8,738	13,252	Lancaster
77,429	86,051	9,205	-	-	802,917	26,175	2,350	15,260	Pendle
198,795	132,702	19,672	-	-	944,858	62,073	2,212	64,732	Preston
107,085	27,270	5,124	-	-	520,403	3,420	2,340	326	Ribble Valley
129,909	50,438	3,308	-	-	652,654	15,747	-	2,557	Rossendale
205,889	29,778	24,951	-	-	874,432	47,716	4,080	-	South Ribble
200,821	61,058	-	16,378	-	944,207	31,257	-	454	West Lancashire
341,701	66,700	5,508	-	-	902,532	69,812	-	-	Wyre

Local Authority	INCOME										Total Net Expenditure (95)
	SALES OF RECLAIMED WASTE							CONTRIBUTIONS FROM OTHER AUTHORITIES		Total Income (94)	
	Paper (85)	Abandoned Vehicles (86)	Glass (87)	Oil (88)	Ferrous Metals (89)	Non-Ferrous Metals (90)	Other (91)	Waste Disposal Authority (92)	Other local authorities (93)		
	£	£	£	£	£	£	£	£	£	£	£
NON-MET DISTRICTS-ENGLAND											
HEREFORD AND WORCESTER											
Bromsgrove	-	-	-	-	-	-	-	829	-	37,442	684,230
Hereford	-	-	-	-	-	-	-	-	-	42,260	364,985
Leominster	-	-	-	-	-	-	-	-	5,969	8,803	218,835
Malvern Hills	-	-	-	-	-	-	-	16,788	-	32,231	659,853
Redditch	-	-	-	-28	-	-	-	48,126	-	101,996	461,698
South Herefordshire	-	-	-	-	-	-	-	-	-	9,275	384,142
Worcester	-	-	-	-	-	-	-	20,281	-	76,759	482,120
Wychavon	-	-	3,291	-	-	-	-	39,610	-	57,168	855,478
Wyre Forest	1,601	-	-	-	-	-	-	-	-	44,329	634,173
HERTFORDSHIRE											
Broxbourne	-	-	615	-	-	-	-	9,531	-	48,299	520,972
Dacorum	2,258	1,197	19,163	1,442	1,808	869	245	17,130	-	196,042	1,053,055
East Hertfordshire	-	522	-	-	-	-	-	1,600	-	58,326	601,265
Hertsmere											
North Hertfordshire	-	-	-	-	-	-	-	9,744	3,970	79,324	825,375
St Albans	-	621	977	-	-	-	-	6,737	-	118,291	754,747
Stevenage	-	250	793	-	-	-	-	13,000	-	147,944	531,860
Three Rivers	-	-	454	-	-	-	-	5,614	-	56,981	731,899
Watford	-	-	-	-	-	-	-	-	97,255	259,683	689,837
Welwyn Hatfield	-	-	-	-	-	-	-	-	-	57,443	868,547
HUMBERSIDE											
Beverley	-	-	-	-	-	-	-	-	-	51,833	934,209
Boothferry											
Cleethorpes	9,830	318	-	-	-	-	1,861	-	-	54,277	576,162
East Yorkshire	-	-	-	-	-	-	-	-	-	83,251	711,707
Glanford	810	-	-	-	-	-	-	-	-	34,523	469,656
Great Grimsby	-	-	-	-	-	-	-	-	-	71,952	787,312
Holderness	-	-	-	-	-	-	-	-	-	9,236	524,613
Kingston-upon-Hull	13,413	-	-	-	-	-	-	-	-	137,676	2,547,913
Scunthorpe	-	-	-	-	-	-	-	1,745	-	56,883	616,615
ISLE OF WIGHT											
Medina	-	-	-	-	-	-	-	-	-	19,022	476,978
South Wight	-	-	-	-	-	-	-	-	-	23,460	443,272
KENT											
Ashford	-	-	-	-	-	-	-	-	16,200	66,981	506,776
Canterbury	-	1,608	-	-	-	-	-	-	-	102,787	832,114
Dartford	-	12	1,688	-	-	446	-	-	19,170	79,383	408,483
Dover	-	205	-	-	-	-	-	16,200	-	39,135	468,679
Gillingham	-	373	**	-	-	-	-	-	-	38,481	352,312
Gravesham	-	489	5,253	-	-	-	-	12,374	-	78,759	578,516
Maidstone	-	-	7,496	-	-	-	2,148	-	8,607	206,459	912,199
Rochester upon Medway	-	862	3,638	-	-	-	-	14,300	240	90,014	655,660
Sevenoaks											
Shepway	28,476	440	-	129	540	1,131	-	6,233	1,814	124,743	520,383
Swale	-	-	6,785	-	-	-	2,670	28,440	-	65,608	674,863
Thanet	-	118	-	-	-	-	-	-	16,200	76,730	825,966
Tonbridge & Malling	-	**	1,443	-	-	-	-	3	6,000	67,441	812,110
Tunbridge Wells	-	446	-	-	-	-	-	6,801	16,200	111,674	722,698
LANCASHIRE											
Blackburn	-	7,369	1,212	-	-	-	-	-	-	92,929	1,237,581
Blackpool	-	93	-	-	-	-	-	-	-	226,351	1,159,085
Burnley	-	-	86	-	-	-	-	-	-	60,006	786,370
Chorley	-	-	597	-	-	-	-	-	-	34,545	849,245
Fylde	-	-	498	-	-	-	3,567	-	-	68,837	513,978
Hyndburn	-	-	-	-	-	-	-	-	-	52,495	680,668
Lancaster	-	-	1,615	-	-	-	-	-	-	105,046	996,053
Pendle	-	50	2,726	-	-	-	-	-	-	46,561	756,356
Preston	-	73	-	-	-	-	-	-	-	129,090	815,768
Ribble Valley	-	-	-	-	-	-	-	-	-	6,086	514,317
Rossendale	142	-	-	-	-	-	270	-	-	18,716	633,938
South Ribble	-	-	8,041	93	-	-	-	-	-	59,930	814,502
West Lancashire	-	-	118	-	-	-	-	-	25,993	77,822	866,385
Wyre	-	-	1,298	-	-	-	-	-	-	71,110	831,422

1983-84 ACTUALS

CAPITAL EXPENDITURE ON REPLACEMENT VEHICLES				COSTS OF COLLECTION					
				COST PER TONNE					
Revenue (96)	Loan (97)	Repairs & Renewals Fund (98)	Lease (99)	Gross (100)	Net (101)	Net cost per domestic hereditament (102)	Net cost per head of population (103)	Waste collected per head of population (104)	Local Authority
£'000	£'000	£'000	£'000	£	£	£	£	kg	
									NON-MET DISTRICTS-ENGLAND
									HEREFORD AND WORCESTER
-	-	37	-	**	**	21.51	7.76	**	Bromsgrove
-	-	-	30	34.22	30.67	20.06	7.64	249	Hereford
-	-	29	-	17.51	17.29	14.70	5.85	348	Leominster
-	-	-	30	23.07	22.00	20.02	7.72	351	Malvern Hills
-	65	-	-	28.04	22.97	17.84	6.55	285	Redditch
-	-	30	-	31.91	31.16	21.37	8.19	263	South Herefordshire
-	-	-	65	26.94	23.24	16.73	6.34	273	Worcester
-	-	-	37	**	**	23.54	8.92	**	Wychavon
-	-	-	-	33.93	31.71	18.01	6.88	217	Wyre Forest
									HERTFORDSHIRE
-	-	-	69	26.70	24.44	17.82	6.54	267	Broxbourne
-	-	-	-	37.50	31.62	21.32	7.96	252	Dacorum
-	-	-	-	20.68	18.85	14.83	5.29	281	East Hertfordshire
									Hertsmere
-	-	-	-	31.69	29.05	20.28	7.53	260	North Hertfordshire
-	-	-	143	27.94	24.16	16.47	5.96	247	St Albans
-	-	-	64	33.10	25.89	19.68	7.03	271	Stevenage
-	-	-	-	42.00	38.94	26.18	9.23	234	Three Rivers
-	7	-	68	32.53	26.31	24.79	9.09	344	Watford
-	-	33	-	38.58	36.19	24.81	9.22	255	Welwyn Hatfield
									HUMBERSIDE
-	3	-	-	25.51	24.18	23.69	8.89	363	Beverley
									Boothferry
-	-	-	45	24.23	22.14	22.43	8.40	379	Cleethorpes
-	-	-	36	39.75	35.59	22.76	9.34	262	East Yorkshire
-	-	-	60	23.78	22.15	18.34	6.97	315	Glanford
-	-	-	36	25.87	23.67	23.00	8.52	353	Great Grimsby
-	-	34	-	35.39	34.97	28.64	11.16	319	Holderness
-	-	23	-	**	**	24.19	9.47	**	Kingston-upon-Hull
-	-	-	34	26.94	24.66	23.24	9.49	385	Scunthorpe
									ISLE OF WIGHT
-	-	-	-	25.85	24.86	17.01	7.01	282	Medina
-	-	-	-	24.56	23.33	20.76	8.56	367	South Wight
									KENT
-	-	-	-	25.57	23.31	15.08	5.77	256	Ashford
-	-	-	-	21.67	19.29	17.37	6.72	348	Canterbury
-	-	100	-	23.62	21.03	17.45	6.33	300	Dartford
-	-	168	-	19.27	17.77	11.79	4.56	253	Dover
-	-	-	34	18.61	16.78	10.21	3.74	223	Gillingham
-	-	-	60	23.43	20.62	16.54	6.05	293	Gravesham
-	-	98	-	28.15	23.17	19.12	6.95	303	Maidstone
-	-	32	140	15.58	13.65	12.40	4.48	318	Rochester upon Medway
									Sevenoaks
-	-	-	14	28.47	22.91	14.36	6.00	255	Shepway
-	-	-	-	**	**	15.42	6.12	**	Swale
-	-	-	97	19.43	18.12	16.35	6.80	375	Thanet
-	-	-	-	31.22	29.04	22.88	8.18	284	Tonbridge & Malling
-	-	92	-	21.98	19.47	19.65	7.33	385	Tunbridge Wells
									LANCASHIRE
-	-	-	44	32.77	30.48	22.93	8.70	286	Blackburn
-	-	-	35	24.43	20.44	20.60	7.92	387	Blackpool
-	-	19	-	27.41	25.47	21.31	8.53	335	Burnley
70	-	-	-	32.98	31.69	24.41	9.28	293	Chorley
-	-	-	3	29.79	26.27	18.75	7.43	283	Fylde
-	-	30	-	30.05	27.90	21.68	8.63	309	Hyndburn
-	-	-	-	30.17	27.29	21.06	7.86	288	Lancaster
-	-	-	54	26.76	25.21	21.45	8.88	352	Pendle
-	-	-	60	25.61	22.11	16.85	6.52	295	Preston
-	-	40	-	30.90	30.34	27.63	9.93	325	Ribble Valley
-	-	7	-	30.36	29.49	24.45	9.87	335	Rossendale
-	-	-	33	32.87	30.62	22.24	8.31	271	South Ribble
-	-	-	-	29.13	27.50	22.24	8.05	296	West Lancashire
-	-	72	-	**	**	21.08	8.45	**	Wyre

Local Authority	POPULATION & AREA			NUMBER OF HEREDITAMENTS				WASTE COLLECTED – BY WEIGHT				
											% OF TOTAL WASTE COLLECTED BY CONTRACTORS	
	Population at 30.6.83	Area	Density of population at 30.6.83	Domestic	Commercial	Industrial	Other	Total weight of all waste	Actual or estimated weight of all waste	Estimated % of waste weighed	Routine collections	Abnormal circumstances
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	'000	hectares	per hectare					tonnes		%	%	%
NON-MET DISTRICTS-ENGLAND												
LEICESTERSHIRE												
Blaby	77.8	13,043	5.96	28,321	2,124	185	388	15,600	E	–	–	–
Charnwood	141.3	27,931	5.06	51,979	6,443	528	872	39,703	E	2	–	–
Harborough	62.2	59,306	1.05	23,184	2,742	212	751	**	**	–	–	–
Hinckley & Bosworth	90.4	29,742	3.04	34,107	4,245	389	531	24,234	A	95	–	–
Leicester	282.3	7,337	38.48	104,933	17,864	1,769	2,185	153,770	E	20	–	–
Melton												
North West Leicestershire	79.1	28,032	2.82	30,227	3,619	188	578	23,600	E	2	–	–
Oadby & Wigston	53.1	2,372	22.39	18,859	1,509	200	158	14,556	E	–	–	–
Rutland	33.8	39,367	0.86	10,644	1,588	64	509	10,556	E	–	–	–
LINCOLNSHIRE												
Boston	52.4	36,027	1.45	21,090	3,380	99	404	12,650	E	–	–	–
East Lindsey												
Lincoln	77.1	3,571	21.59	31,163	6,306	98	436	30,000	E	–	–	–
North Kesteven	80.4	92,297	0.87	29,757	3,240	111	707	28,249	E	–	–	–
South Holland												
South Kesteven	98.8	94,301	1.05	38,813	6,136	274	998	36,900	E	–	–	–
West Lindsey	76.1	115,357	0.66	29,019	3,756	147	949	24,300	E	–	–	–
NORFOLK												
Breckland	99.1	130,504	0.76	38,677	5,857	287	1,030	20,500	E	–	–	–
Broadland	98.9	55,215	1.79	37,980	2,805	137	816	27,400	E	–	–	–
Great Yarmouth	82.3	17,333	4.75	33,922	5,213	205	869	27,581	A	98	–	–
Kings Lynn & West Norfolk												
North Norfolk	84.9	96,513	0.88	38,096	4,762	154	1,569	26,024	E	–	100	–
Norwich	126.1	3,898	32.35	50,965	12,670	254	782	39,523	E	–	–	–
South Norfolk	97.1	90,692	1.07	37,597	3,685	187	1,111	**	**	–	–	–
NORTHAMPTONSHIRE												
Corby	51.5	8,031	6.41	19,427	5,853	230	329	27,535	E	–	–	–
Daventry	58.8	66,601	0.88	22,052	2,971	187	751	16,586	E	1	–	–
East Northamptonshire												
Kettering	71.5	23,364	3.06	28,210	4,740	238	574	29,000	E	–	–	–
Northampton	164.1	8,066	20.34	63,530	10,104	532	1,087	48,220	E	25	–	–
South Northamptonshire	65.9	63,351	1.04	24,667	3,079	105	718	15,000	E	5	–	–
Wellingborough	64.5	16,315	3.95	24,696	5,176	289	455	18,256	E	–	–	–
NORTHUMBERLAND												
Alnwick	29.1	108,028	0.27	11,655	1,804	70	666	9,364	A	–	–	–
Blyth Valley	78.2	7,031	11.12	30,001	5,396	119	464	37,180	E	–	–	–
Castle Morpeth												
Tynedale	54.5	222,096	0.25	21,509	3,100	108	1,017	26,800	E	–	–	–
Wansbeck	62.2	6,645	9.36	24,569	4,733	71	363	24,242	A	7	–	–
NORTH YORKSHIRE												
Craven	48.4	117,980	0.41	19,556	3,598	150	1,042	16,151	E	2	–	–
Hambleton	75.8	131,158	0.58	27,532	3,907	110	1,381	29,000	E	–	–	–
Harrogate	141.1	133,396	1.06	54,464	8,321	188	1,845	60,398	E	–	–	–
Richmondshire	45.4	131,718	0.34	14,561	2,242	54	997	23,000	E	–	–	–
Ryedale	87.2	139,814	0.63	33,349	3,409	109	1,298	46,000	E	30	–	–
Scarborough	102.1	81,714	1.25	43,271	7,690	141	1,601	45,523	E	73	–	–
Selby	82.0	72,487	1.13	29,776	3,120	111	975	25,600	E	25	–	–
York	102.7	2,946	34.86	39,822	4,903	78	741	45,600	A	95	–	–
NOTTINGHAMSHIRE												
Ashfield	105.8	11,009	9.61	41,075	4,740	315	496	41,600	E	25	–	–
Bassetlaw												
Broxtowe	104.2	8,108	12.85	40,375	4,634	234	512	**	**	75	–	–
Gedling	104.9	11,236	9.34	40,919	5,669	149	457	30,000	E	85	–	–
Mansfield	99.6	7,692	12.95	38,961	4,700	171	569	38,500	E	–	–	–
Newark	104.5	66,158	1.58	39,851	5,540	152	1,019	35,240	E	–	–	–
Nottingham	277.1	7,431	37.29	108,491	19,888	1,175	1,571	121,580	E	95	–	–
Rushcliffe	92.8	40,992	2.26	35,720	4,550	129	800	45,000	E	60	–	–
OXFORDSHIRE												
Cherwell	113.0	58,983	1.92	40,014	7,149	186	994	31,988	E	46	2	–
Oxford	116.4	3,555	32.74	36,791	8,236	70	1,036	33,766	A	100	1	–
South Oxfordshire	131.9	68,665	1.92	47,031	7,915	144	1,311	45,250	A	100	100	–
Vale of White Horse	105.1	58,099	1.81	37,565	6,672	141	1,005	29,000	E	75	100	–
West Oxfordshire												

WASTE COLLECTED – BY TYPE			WASTE COLLECTED – BY METHOD OF STORAGE				METHODS OF COLLECTION						
							HOUSEHOLD WASTE						
Household waste (13)	Commercial waste (14)	Industrial waste (15)	Contained in dustbins (16)	Contained in disposable sacks (17)	Contained in bulk storage containers (18)	Other (19)	Backdoor collect & return (20)	Kerbside (21)	Other collect & return (22)	Skep (23)	Other normal methods (24)	Special collections (25)	Local Authority
%	%	%	%	%	%	%	%	%	%	%	%	%	
													NON-MET DISTRICTS-ENGLAND
													LEICESTERSHIRE
99	1	–	–	99	1	–	98	–	–	–	–	2	Blaby
90	4	6	5	84	8	3	99	–	–	–	–	1	Charnwood
90	8	2	–	92	3	5	94	–	–	–	1	5	Harborough
87	11	2	80	20	–	–	100	–	–	–	–	–	Hinckley & Bosworth
75	25	–	52	2	36	10	98	–	–	–	1	1	Leicester
													Melton
94	6	–	96	2	2	–	93	–	–	–	–	7	North West Leicestershire
80	10	10	80	–	1	19	99	–	–	–	–	1	Oadby & Wigston
96	4	–	5	95	–	–	100	–	–	–	–	–	Rutland
													LINCOLNSHIRE
75	25	–	95	5	–	–	–	10	–	90	–	–	Boston
													East Lindsey
93	5	2	–	93	5	2	100	–	–	–	–	–	Lincoln
97	3	–	–	100	–	–	100	–	–	–	–	–	North Kesteven
													South Holland
83	17	–	40	49	7	4	78	–	21	–	–	1	South Kesteven
95	5	–	–	95	5	–	95	–	–	–	–	5	West Lindsey
													NORFOLK
94	6		–	99	1	–	100	–	–	–	–	–	Breckland
80	10	10	–	80	20	–	90	–	–	–	–	10	Broadland
95	–	5	–	95	–	5	100	–	–	–	–	–	Great Yarmouth
													Kings Lynn & West Norfolk
90	10	*	74	18	8	–	16	–	–	82	2	*	North Norfolk
85	15	–	2	83	15	–	100	–	–	–	–	–	Norwich
90	10	–	–	95	–	5	2	98	–	–	–	–	South Norfolk
													NORTHAMPTONSHIRE
80	20	–	60	15	20	5	–	10	90	–	–	–	Corby
94	6	–	60	32	5	3	33	34	33	–	–	–	Daventry
													East Northamptonshire
84	8	8	2	69	16	13	100	–	–	–	–	–	Kettering
96	2	2	–	94	4	2	–	15	85	–	–	–	Northampton
85	10	5	50	40	–	10	–	99	–	–	–	1	South Northamptonshire
96	1	3	–	100	–	–	100	–	–	–	–	–	Wellingborough
													NORTHUMBERLAND
75	23	2	54	14	6	26	100	–	–	–	–	–	Alnwick
92	6	2	95	2	2	1	98	1	–	–	–	1	Blyth Valley
													Castle Morpeth
81	19	–	70	30	–	–	100	–	–	–	–	–	Tynedale
85	14	1	85	–	–	15	100	–	–	–	–	–	Wansbeck
													NORTH YORKSHIRE
74	22	4	83	5	4	6	94	5	–	–	–	1	Craven
96	3	1	69	26	–	5	100	–	–	–	–	–	Hambleton
80	20	–	1	87	10	2	99	–	–	–	1	–	Harrogate
93	5	–	94	3	3	–	93	–	–	–	3	2	Richmondshire
94	4	2	–	98	2	–	100	–	–	–	–	–	Ryedale
78	18	4	47	2	34	17	79	–	–	–	20	1	Scarborough
89	11	–	88	3	8	1	94	–	2	–	1	3	Selby
65	35	–	65	20	10	5	99	–	–	–	–	1	York
													NOTTINGHAMSHIRE
95	5	–	90	5	5	–	85	–	–	–	5	10	Ashfield
													Bassetlaw
82	13	5	94	–	4	2	80	15	–	–	1	4	Broxtowe
80	10	10	90	–	10	–	–	–	–	85	–	15	Gedling
95	5	–	75	20	5	–	100	–	–	–	–	–	Mansfield
94	5	1	21	79	–	–	100	–	–	–	–	–	Newark
85	10	5	73	3	7	17	–	–	–	85	3	12	Nottingham
94	6	–	1	90	5	4	100	–	–	–	–	–	Rushcliffe
													OXFORDSHIRE
82	18	–	40	39	6	15	5	–	93	–	1	1	Cherwell
80	20	–	80	–	19	1	87	–	–	–	12	1	Oxford
100	–	–	75	10	6	9	25	57	17	–	1		South Oxfordshire
85	10	5	68	15	15	2	5	94	–	–	–	1	Vale of White Horse
													West Oxfordshire

WASTE COLLECTION STATISTICS

Local Authority	METHODS OF COLLECTION: COMMERCIAL WASTE: Backdoor collect & return (26)	Kerbside (27)	Other collect & return (28)	Skep (29)	Other normal methods (30)	Special collections (31)	Collection system (See Notes) (32)	NUMBER OF DISPOSABLE SACKS USED: Paper (33)	Plastic (34)
	%	%	%	%	%	%		'000	'000
NON-MET DISTRICTS-ENGLAND									
LEICESTERSHIRE									
Blaby	80	20	-	-	-	-	T	-	2,252
Charnwood	100	-	-	-	-	-	T	-	3,633
Harborough	99	-	-	-	1	-	T	-	1,200
Hinckley & Bosworth	100	-	-	-	-	-	C	-	75
Leicester	100	-	-	-	-	-	T	-	264
Melton									
North West Leicestershire	65	-	-	-	35	-	T	-	16
Oadby & Wigston	100	-	-	-	-	-	T	-	-
Rutland	100	-	-	-	-	-	T	-	880
LINCOLNSHIRE									
Boston	-	-	-	90	-	10	T	100	-
East Lindsey									
Lincoln	-	-	-	-	-	100	C	-	2,000
North Kesteven	100	-	-	-	-	-	T	-	2,048
South Holland									
South Kesteven	88	-	12	-	-	-	T	-	1,537
West Lindsey	100	-	-	-	-	-	T	-	2,700
NORFOLK									
Breckland	99	-	-	-	1	-	C	-	3,144
Broadland	60	-	-	-	40	-	T	-	3,000
Great Yarmouth	95	-	-	5	-	-	T	-	2,386
Kings Lynn & West Norfolk									
North Norfolk	38	-	-	-	62	-	C	-	508
Norwich	100	-	-	-	-	-	T	-	4,250
South Norfolk	100	-	-	-	-	-	T	-	2,200
NORTHAMPTONSHIRE									
Corby	15	-	-	60	-	25	T	-	484
Daventry	100	-	-	-	-	-	B	-	307
East Northamptonshire									
Kettering	100	-	-	-	-	-	T	-	1,750
Northampton	-	35	-	-	60	5	B	5	5,000
South Northamptonshire	-	100	-	-	-	-	T	-	80
Wellingborough	100	-	-	-	-	-	T	-	2,300
NORTHUMBERLAND									
Alnwick	100	-	-	-	-	-	T	-	54
Blyth Valley	75	3	2	-	20	-	C	-	48
Castle Morpeth									
Tynedale	100	-	-	-	-	-	T	-	475
Wansbeck	100	-	-	-	-	-	T	-	-
NORTH YORKSHIRE									
Craven	100	-	-	-	-	-	T	-	135
Hambleton	100	-	-	-	-	-	T	-	600
Harrogate	70	-	-	-	30	-	C	-	4,100
Richmondshire	100	-	-	-	-	-	T	15	10
Ryedale	98	-	-	-	2	-	T	-	2,800
Scarborough	15	-	-	-	85	-	T	13	208
Selby	26	3	3	-	63	1	T	-	12
York	80	19	-	-	-	1	T	-	86
NOTTINGHAMSHIRE									
Ashfield	30	-	-	-	65	5	T	-	120
Bassetlaw									
Broxtowe	64	12	-	-	17	7	T	-	-
Gedling	-	-	60	15	-	25	T	-	300
Mansfield	-	-	-	-	100	-	T	-	1,005
Newark	100	-	-	-	-	-	T	-	2,312
Nottingham	-	-	-	12	85	3	T	-	-
Rushcliffe	100	-	-	-	-	-	T	-	3,300
OXFORDSHIRE									
Cherwell	-	-	67	-	33	-	T	-	-
Oxford	56	-	-	-	44	-	T	-	-
South Oxfordshire	**	**	**	**	**	**	**	42	404
Vale of White Horse	-	75	-	-	25	-	**	-	-
West Oxfordshire									

NUMBER OF BULK STORAGE CONTAINERS		PROVISION OF DUSTBINS/ SACKHOLDERS		FREQUENCY OF COLLECTION PER WEEK						
				NORMAL HOUSEHOLD WASTE			COMMERCIAL WASTE			
With compaction (35)	Without compaction (36)	Charge (See Notes) (37)	Number (38)	Twice or more (39)	Once (40)	Less than once (41)	Twice or more (42)	Once (43)	Less than once (44)	Local Authority
				%	%	%	%	%	%	
										NON-MET DISTRICTS-ENGLAND
										LEICESTERSHIRE
-	199	F	1,425	-	100	-	-	100	-	Blaby
-	355	N	-	-	100	-	5	95	-	Charnwood
6	130	F	400	-	100	-	-	100	-	Harborough
-	-	C	230	-	100	-	8	92	-	Hinckley & Bosworth
-	2,250	F	11,102	-	100	-	25	75	-	Leicester
										Melton
-	100	F	2,700	-	100	-	-	100	-	North West Leicestershire
-	170	N	274	-	100	-	6	94	-	Oadby & Wigston
-	-	C	56	-	100	-	-	100	-	Rutland
										LINCOLNSHIRE
-	-	N	6	-	100	-	5	95	-	Boston
										East Lindsey
-	700	N	-	-	100	-	100	-	-	Lincoln
-	-	C	-	-	100	-	2	98	-	North Kesteven
										South Holland
-	-	N	-	-	100	-	5	95	-	South Kesteven
1	-	N	-	-	100	-	1	99	-	West Lindsey
										NORFOLK
-	70	N	-	-	100	-	1	99	-	Breckland
250	-	N	-	-	100	-	-	100	-	Broadland
-	493	C	204	-	100	-	2	98	-	Great Yarmouth
										Kings Lynn & West Norfolk
-	329	N	-	100	-	-	16	84	*	North Norfolk
-	697	F	900	5	95	-	15	85	-	Norwich
-	-	N	-	-	100	-	10	90	-	South Norfolk
										NORTHAMPTONSHIRE
-	750	N	960	-	100	-	20	80	-	Corby
-	114	C	76	-	100	-	60	40	-	Daventry
										East Northamptonshire
-	505	C	-	-	100	-	2	98	-	Kettering
2	379	F	1,398	-	100	-	44	56	-	Northampton
-	-	N	20	-	100	-	-	100	-	South Northamptonshire
-	-	C	167	-	100	-	-	100	-	Wellingborough
										NORTHUMBERLAND
-	48	N	**	-	96	4	18	82	-	Alnwick
-	100	C	-	-	100	-	33	67	-	Blyth Valley
										Castle Morpeth
-	-	N	-	-	95	5	30	70	-	Tynedale
-	-	N	-	5	95	-	46	54	-	Wansbeck
										NORTH YORKSHIRE
-	134	C	80	-	100	-	8	92	-	Craven
-	-	N	20	-	98	2	-	100	-	Hambleton
3	1,113	C	558	-	99	1	10	90	-	Harrogate
-	343	N	20	-	100	-	1	99	-	Richmondshire
-	88	N	-	**	**	**	-	100	-	Ryedale
-	481	N	-	-	100	-	8	90	2	Scarborough
-	360	C	350	99	1	-	7	93	-	Selby
-	720	N	30	-	100	-	15	85	-	York
										NOTTINGHAMSHIRE
-	450	N	-	-	100	-	1	98	1	Ashfield
										Bassetlaw
-	240	C	3,700	-	100	-	-	100	-	Broxtowe
-	120	N	100	-	100	-	35	60	5	Gedling
-	498	C	540	-	100	-	-	100	-	Mansfield
-	26	N	-	-	100	-	-	100	-	Newark
-	2,900	N	-	-	100	-	10	90	-	Nottingham
-	310	C	30	-	100	-	10	90	-	Rushcliffe
										OXFORDSHIRE
1	420	N	-	-	100	-	-	100	-	Cherwell
-	1,800	N	-	-	100	-	5	95	-	Oxford
-	316	N	25	-	100	-	##	##	##	South Oxfordshire
-	20	N	-	-	100	-	10	90	-	Vale of White Horse
										West Oxfordshire

WASTE COLLECTION STATISTICS

Local Authority	NUMBER OF BOTTLE BANKS		WASTE OIL COLLECTION POINTS		AMOUNT OF WASTE				
	Owned & operated by the local authority (45)	Other (46)	Owned & operated by the local authority (47)	Other (e.g. garages) (48)	Paper (49)	Abandoned Vehicles (50)	Glass (51)	Oil (52)	Ferrous Metals (53)
					tonnes	no.	tonnes	'000 litres	tonnes
NON-MET DISTRICTS-ENGLAND									
LEICESTERSHIRE									
Blaby	-	-	-	-	-	-	-	-	-
Charnwood	-	1	-	-	-	**	-	-	-
Harborough	-	-	-	-	-	15	-	-	-
Hinckley & Bosworth	4	-	1	-	-	19	142	1	-
Leicester	12	-	-	-	-	310	907	-	-
Melton									
North West Leicestershire	-	-	-	-	-	5	-	-	-
Oadby & Wigston	-	-	-	-	-	-	-	-	-
Rutland	-	-	-	-	-	-	-	-	-
LINCOLNSHIRE									
Boston	-	18	-	-	-	12	120	-	-
East Lindsey									
Lincoln	8	-	-	-	-	50	232	-	-
North Kesteven	-	4	-	-	474	4	68	-	23
South Holland									
South Kesteven	-	37	-	-	-	8	-	-	-
West Lindsey	-	4	-	-	-	**	76	-	-
NORFOLK									
Breckland	-	2	-	-	-	7	-	-	-
Broadland	-	2	-	-	-	50	-	-	-
Great Yarmouth	-	-	-	-	-	72	-	-	-
Kings Lynn & West Norfolk									
North Norfolk	-	-	-	-	-	-	-	-	-
Norwich.	-	2	-	1	-	209	-	7	-
South Norfolk	-	6	-	-	-	12	-	3	-
NORTHAMPTONSHIRE									
Corby	-	-	-	-	-	100	-	-	-
Daventry	1	-	-	-	-	47	101	-	-
East Northamptonshire									
Kettering	1	-	-	-	-	40	94	-	-
Northampton	11	-	-	-	2,235	307	1,186	-	-
South Northamptonshire	-	-	-	-	-	50	-	-	-
Wellingborough	1	-	2	-	-	44	122	-	-
NORTHUMBERLAND									
Alnwick	4	-	-	-	-	**	100	-	-
Blyth Valley	2	-	-	-	-	-	72	-	-
Castle Morpeth									
Tynedale	-	-	-	-	-	8	-	-	-
Wansbeck	-	-	-	-	-	-	-	-	-
NORTH YORKSHIRE									
Craven	-	-	2	-	158	-	-	*	-
Hambleton	-	3	-	-	-	21	6	-	-
Harrogate	2	1	1	-	-	100	133	10	459
Richmondshire	-	-	-	-	-	15	-	-	-
Ryedale	-	4	1	-	-	7	123	-	-
Scarborough	3	-	-	-	-	31	165	-	-
Selby	-	6	-	2	-	11	67	-	-
York	4	-	3	-	78	42	186	**	**
NOTTINGHAMSHIRE									
Ashfield	-	12	-	-	-	-	150	-	-
Bassetlaw									
Broxtowe	-	9	3	-	-	-	8,630	10	672
Gedling	-	15	-	-	-	30	140	-	-
Mansfield	-	2	-	-	-	-	40	-	-
Newark	-	4	2	-	-	52	100	1	-
Nottingham	-	-	-	-	-	51	-	-	-
Rushcliffe	-	12	1	-	-	26	-	1	-
OXFORDSHIRE									
Cherwell	4	-	1	6	-	39	516	1	-
Oxford	6	-	-	1	-	152	507	5	-
South Oxfordshire	-	1	-	-	-	-	-	-	-
Vale of White Horse	3	-	-	3	-	134	223	-	-
West Oxfordshire									

RECLAIMED		NUMBER OF LOCAL AUTHORITY'S COLLECTION VEHICLES				NUMBER OF CONTRACTORS' COLLECTION VEHICLES				
		SPECIALIST				SPECIALIST				
Non-Ferrous Metals (54)	Other (55)	With compaction (56)	Without compaction (57)	General purpose (58)	Total (59)	With compaction (60)	Without compaction (61)	General purpose (62)	Total (63)	Local Authority
tonnes	tonnes									
										NON-MET DISTRICTS-ENGLAND
										LEICESTERSHIRE
-	-	10	-	1	11	-	-	-	-	Blaby
-	-	17	-	4	21	-	-	-	-	Charnwood
-	-	11	1	-	12	-	-	-	-	Harborough
-	-	15	-	-	15	-	-	-	-	Hinckley & Bosworth
-	70	35	5	-	60	-	-	-	-	Leicester
										Melton
-	-	14	-	-	14	-	-	-	-	North West Leicestershire
-	-	8	-	1	9	-	-	-	-	Oadby & Wigston
-	-	5	-	1	6	-	-	-	-	Rutland
										LINCOLNSHIRE
-	-	11	-	2	13	-	-	-	-	Boston
										East Lindsey
-	-	10	-	-	10	-	-	-	-	Lincoln
-	2	14	-	6	20	-	-	-	-	North Kesteven
										South Holland
-	-	16	-	-	16	-	-	-	-	South Kesteven
-	-	17	1	-	18	-	-	-	-	West Lindsey
										NORFOLK
-	-	15	-	-	15	-	-	-	-	Breckland
-	-	16	1	2	19	-	-	-	-	Broadland
-	-	13	2	1	16	-	-	-	-	Great Yarmouth
										Kings Lynn & West Norfolk
-	-	**	**	**	**	16	-	3	19	North Norfolk
-	-	20	1	3	24	-	-	-	-	Norwich
-	-	13	-	1	14	-	-	-	-	South Norfolk
										NORTHAMPTONSHIRE
-	-	9	-	2	11	-	-	-	-	Corby
-	-	8	1	-	9	-	-	-	-	Daventry
										East Northamptonshire
-	-	9	-	1	10	-	-	-	-	Kettering
-	-	15	2	4	21	-	-	-	-	Northampton
-	-	8	-	-	8	-	-	-	-	South Northamptonshire
-	-	8	-	-	8	-	-	-	-	Wellingborough
										NORTHUMBERLAND
-	-	9	-	9	18	-	-	-	-	Alnwick
-	-	11	-	1	12	-	-	-	-	Blyth Valley
										Castle Morpeth
-	-	14	2	1	17	-	-	-	-	Tynedale
-	-	11	-	-	11	-	-	-	-	Wansbeck
										NORTH YORKSHIRE
20	-	13	-	1	14	-	-	-	-	Craven
-	-	16	1	1	18	-	-	-	-	Hambleton
17	-	33	1	2	36	-	-	-	-	Harrogate
-	-	10	-	2	12	-	-	-	-	Richmondshire
-	-	19	-	-	19	-	-	-	-	Ryedale
-	-	27	4	-	31	-	-	-	-	Scarborough
-	-	19	-	-	19	-	-	-	-	Selby
**	711	15	7	-	22	-	-	-	-	York
										NOTTINGHAMSHIRE
-	-	19	-	2	21	-	-	-	-	Ashfield
										Bassetlaw
-	-	19	-	3	22	-	-	-	-	Broxtowe
-	-	14	-	3	17	-	-	-	-	Gedling
-	-	17	1	2	20	-	-	-	-	Mansfield
-	-	15	-	3	18	-	-	-	-	Newark
-	-	50	4	3	57	-	-	-	-	Nottingham
-	-	19	4	3	26	-	-	-	-	Rushcliffe
										OXFORDSHIRE
-	-	15	-	1	16	**	**	**	**	Cherwell
-	-	18	-	-	18	**	**	**	**	Oxford
-	-	**	**	**	**	15	1	2	18	South Oxfordshire
-	-	**	**	**	**	10	1	1	12	Vale of White Horse
										West Oxfordshire

Local Authority	LOCAL AUTHORITY STAFF EMPLOYED AT 31.3.84								EXPENDITURE			
	Drivers (64)	Loaders (65)	Drivers/ Loaders (66)	Other manual (67)	Vehicle maintenance (68)	Technical & administrative (69)	Total (70)	Contractors' manual employees (71)	Employees (72)	Premises/ depots (73)	Provision of disposable sacks (74)	Provision of dustbins (75)
	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	£	£	£	£
NON-MET DISTRICTS-ENGLAND												
LEICESTERSHIRE												
Blaby	7	29	2	-	1	2	41	-	356,709	10,431	56,099	5,985
Charnwood	-	51	20	-	3	3	77	-	614,133	28,303	106,372	-
Harborough	11	29	-	-	1	2	43	-	330,145	9,777	73,997	-
Hinckley & Bosworth	-	36	16	-	1	2	55	-	402,232	18,323	2,010	767
Leicester	6	110	47	-	9	21	193	-	1,546,865	88,074	12,251	48,693
Melton												
North West Leicestershire	-	38	19	-	-	3	60	-	479,331	7,262	5,200	23,323
Oadby & Wigston	-	23	9	-	3	2	37	-	205,813	-	-	-
Rutland	-	12	5	-	-	1	18	-	125,762	8,300	24,432	238
LINCOLNSHIRE												
Boston	6	29	3	-	2	1	41	-	339,669	2,760	-	-
East Lindsey												
Lincoln	10	30	-	-	2	1	43	-	335,666	-	87,005	-
North Kesteven	10	33	8	-	2	3	56	-	386,874	18,530	76,858	476
South Holland												
South Kesteven	15	48	5	-	2	4	74	-	398,275	7,714	46,150	-
West Lindsey	-	30	20	-	-	-	50	-	378,178	22,633	83,958	-
NORFOLK												
Breckland	-	23	11	-	2	1	37	-	390,410	6,386	89,614	-
Broadland	-	25	22	-	3	3	53	-	386,523	11,087	71,577	-
Great Yarmouth	-	38	17	-	2	2	59	-	460,150	-	98,929	-
Kings Lynn & West Norfolk												
North Norfolk	**	**	**	**	**	1	1	**	13,000	1,302	-	-
Norwich	-	39	29	-	5	5	78	-	752,344	15,252	84,429	4,135
South Norfolk	-	13	12	5	4	2	38	-	293,095	10,246	47,008	-
NORTHAMPTONSHIRE												
Corby	10	16	11	-	3	-	40	-	235,921	32,789	13,350	-
Daventry	-	18	10	-	1	2	31	-	254,241	19,470	19,602	334
East Northamptonshire												
Kettering	8	25	-	-	3	3	39	-	297,381	21,442	51,557	-
Northampton	14	43	7	4	11	11	90	-	705,191	67,079	152,421	16,800
South Northamptonshire	-	12	7	-	1	2	22	-	182,680	-	9,628	221
Wellingborough	5	18	2	-	2	1	28	-	203,537	4,039	72,497	450
NORTHUMBERLAND												
Alnwick	-	15	7	-	3	1	26	-	215,107	3,456	2,853	1,471
Blyth Valley	10	36	-	-	1	2	49	-	349,135	-	2,375	-
Castle Morpeth												
Tynedale	9	22	9	-	3	2	45		341,708	21,168	18,865	-
Wansbeck	8	42	1	-	2	2	55	-	412,017	6,301	-	-
NORTH YORKSHIRE												
Craven	-	25	9	1	3	1	39	-	218,942	10,088	3,575	-
Hambleton	-	12	44	-	2	2	60	-	419,158	14,570	11,741	1,165
Harrogate	10	61	27	-	5	4	107	-	777,532	23,563	125,510	1,986
Richmondshire	-	17	8	-	-	1	26	-	201,690	-	6,740	-
Ryedale	12	39	2	-	1	2	56	-	399,343	46,769	68,496	-
Scarborough	21	58	2	-	-	-	81	-	667,139	14,629	9,084	-
Selby	21	53	-	-	2	2	78	-	587,668	265	3,302	-
York	12	46	2	-	2	3	65	-	539,961	**	**	**
NOTTINGHAMSHIRE												
Ashfield	9	59	10	-	5	4	87	-	664,330	17,139	-	-
Bassetlaw												
Broxtowe	16	51	5	2	3	4	81	-	631,814	22,231	-	-
Gedling	20	60	20	-	5	3	108	-	580,299	9,309	26,277	2,036
Mansfield	14	49	10	-	**	3	76	-	591,507	37,800	39,214	-
Newark	-	53	20	-	2	1	76	-	527,534	2,156	69,929	-
Nottingham	-	145	57	-	17	8	227	-	1,877,068	170,328	-	-
Rushcliffe	-	48	20	-	5	3	76	-	519,918	24,978	93,798	501
OXFORDSHIRE												
Cherwell	10	30	3	-	2	3	48	**	419,773	795	2,862	-
Oxford	20	48	-	-	2	**	70	**	561,154	174,407	-	5,259
South Oxfordshire	**	**	**	**	**	2	2	43	103,284	-	-	-
Vale of White Horse	**	**	**	**	**	1	1	29	393,558	15,528	4,165	-
West Oxfordshire												

1983-84 ACTUALS

EXPENDITURE						INCOME			
			AGENCY SERVICES			COLLECTION SERVICES			
Transport & moveable plant (76)	Establishment expenses (77)	Other running expenses (78)	Other local authorities (79)	Contractors (80)	Gross Expenditure (81)	Commercial waste (82)	Bulky household waste (83)	Other (84)	Local Authority
£	£	£	£	£	£	£	£	£	
									NON-MET DISTRICTS—ENGLAND
									LEICESTERSHIRE
90,467	46,160	3,679	-	-	569,930	4,212	28,345	415	Blaby
302,079	52,127	4,655	-	-	1,107,669	113,501	-	-	Charnwood
139,536	32,060	3,425	9,480	-	600,420	56,941	-	-	Harborough
137,280	9,434	19,389	-	-	609,655	17,193	-	2,607	Hinckley & Bosworth
787,604	434,697	46,296	-	-	2,964,480	375,421	-	13,062	Leicester
									Melton
214,138	64,981	6,482	5,462	-	806,199	31,468	-	251	North West Leicestershire
37,624	411	5,023	15,017	-	283,888	43,361	-	221	Oadby & Wigston
71,453	16,000	1,335	-	-	247,320	9,065	4,132	1,571	Rutland
									LINCOLNSHIRE
95,369	15,074	17,300	-	-	470,172	36,625	**	-	Boston
									East Lindsey
149,830	28,965	4,648	-	-	606,114	55,204	-	-	Lincoln
143,761	35,796	8,079	-	-	670,374	14,226	-	835	North Kesteven
									South Holland
176,416	42,151	319	-	-	871,025	37,972	2,241	6,889	South Kesteven
154,414	89,242	528	-	-	728,953	12,398	-	2,839	West Lindsey
									NORFOLK
234,818	36,650	956	8,074	-	786,908	32,494	-	100	Breckland
233,953	40,432	1,719	17,254	-	762,545	39,308	962	3,393	Broadland
172,129	54,616	15,597	5,752	-	807,173	73,195		-	Great Yarmouth
									Kings Lynn & West Norfolk
-	3,588	13,535	15,045	636,446	682,916	49,055	-	-	North Norfolk
299,469	6,439	31,724	-	-	1,193,792	227,561	-	3,342	Norwich
158,471	43,347	5,788	-	-	537,955	10,493	-	3,449	South Norfolk
									NORTHAMPTONSHIRE
111,136	27,180	5,413	16,308	-	442,297	60,246	6,767	34,980	Corby
96,409	21,889	2,292	1,838	-	416,075	-	18,872	-	Daventry
									East Northamptonshire
91,045	54,420	3,316	-	3,266	522,427	60,271	-	18,730	Kettering
295,342	113,345	16,017	-	-	1,366,195	86,467	19,463	-	Northampton
187,168	3,843	628	1,579	19	385,762	15,528	-	-	South Northamptonshire
80,791	40,074	24,640	-	-	426,028	2,210	2,286	3,149	Wellingborough
									NORTHUMBERLAND
104,588	6,429	2,792	-	-	336,696	12,859	125	884	Alnwick
262,480	30,570	2,276	-	-	646,836	36,735	-	-	Blyth Valley
									Castle Morpeth
124,083	6,080	-	4,800	-	516,704	1,882	-	22,132	Tynedale
147,307	75,036	-	-	-	640,681	10,528	-	752	Wansbeck
									NORTH YORKSHIRE
176,920	19,370	3,261	-	-	432,156	22,176	-	457	Craven
151,892	19,213	774	18	-	618,931	12,400	-	33	Hambleton
345,427	70,950	18,381	-	-	1,363,349	172,972	26,221	-	Harrogate
133,413	18,200	3,611	-	-	363,654	6,979	501	-	Richmondshire
145,971	20,811	2,532	-	-	684,122	18,063	683	18	Ryedale
390,937	104,834	18,388	-	-	1,205,031	129,170	56,529	1,064	Scarborough
243,123	15,799	17,648	-	-	867,805	34,940	-	-	Selby
159,575	2,794	2,423	**	**	724,753	100,861	1,986	**	York
									NOTTINGHAMSHIRE
212,832	43,333	12,096	5,476	-	935,206	48,868	-	493	Ashfield
									Bassetlaw
233,675	71,921	14,693	12,671	-	987,005	61,112	2,045	2,143	Broxtowe
213,122	37,763	53,235	-	-	922,041	51,357	-	4,702	Gedling
211,740	106,800	2,444	-	9,756	999,261	54,526	1,202	2,775	Mansfield
169,810	11,770	7,888	10,986	-	800,073	60,837	1,425	1,206	Newark
642,612	382,137	42,425	-	-	3,114,570	323,377	-	210	Nottingham
162,733	25,017	7,342	15,071	-	849,358	52,010	6,225	-	Rushcliffe
									OXFORDSHIRE
267,598	49,896	5,639	28,418	24,354	799,335	98,888	-	304	Cherwell
209,113	729	744	40,200	-	991,606	279,559	**	9,233	Oxford
13,110	127,637	8,826	-	588,616	841,473	-	-	2,222	South Oxfordshire
109,539	74,691	27,631	4,329	141,599	771,040	34,203	521	473	Vale of White Horse
									West Oxfordshire

Local Authority	INCOME										
	SALES OF RECLAIMED WASTE							CONTRIBUTIONS FROM OTHER AUTHORITIES			
	Paper (85)	Abandoned Vehicles (86)	Glass (87)	Oil (88)	Ferrous Metals (89)	Non-Ferrous Metals (90)	Other (91)	Waste Disposal Authority (92)	Other local authorities (93)	Total Income (94)	Total Net Expenditure (95)
	£	£	£	£	£	£	£	£	£	£	£
NON-MET DISTRICTS-ENGLAND											
LEICESTERSHIRE											
Blaby	-	-	-	-	-	-	-	-	99	33,071	536,459
Charnwood	-	-	-	-	-	-	-	-	-	113,501	994,168
Harborough	-	415	-	-	-	-	52	-	-	57,408	543,012
Hinckley & Bosworth	-	-	3,910	-	-	-	-	10,780	-	34,490	575,165
Leicester	-	493	11,963	-	603	-	-	-	108,500	510,042	2,434,438
Melton											
North West Leicestershire	-	-	-	-	-	-	-	-	-	31,719	774,480
Oadby & Wigston	-	-	-	-	-	-	-	-	-	43,582	240,306
Rutland	-	-	-	-	-	-	-	-	-	10,788	236,732
LINCOLNSHIRE											
Boston	-	-	-	-	-	-	-	-	-	36,625	433,547
East Lindsey											
Lincoln	-	-	3,353	-	-	-	285	-	-	59,042	547,072
North Kesteven	12,432	-	212	-	271	-	96	-	3,781	31,853	638,521
South Holland											
South Kesteven	-	23	-	-	-	-	-	-	-	47,127	823,898
West Lindsey	-	-	154	-	-	-	-	-	-	15,391	713,562
NORFOLK											
Breckland	-	-	-	-	-	-	-	23,046	1,444	57,084	729,824
Broadland	-	-	-	-	-	-	180	-	1,060	44,903	717,642
Great Yarmouth	-	-	-	-	-	-	-	-	-	73,195	733,978
Kings Lynn & West Norfolk											
North Norfolk	-	-	-	-	-	-	-	-	-	49,055	633,861
Norwich	-	1,119	-	-	-	-	-	-	-	232,022	961,770
South Norfolk	58	-	-	-	-	-	-	-	-	14,000	543,955
NORTHAMPTONSHIRE											
Corby	-	-	-	-	-	-	867	-	-	102,860	339,437
Daventry	-	15	682	-	-	-	691	-	-	20,260	395,815
East Northamptonshire											
Kettering	-	87	1,344	29	595	-	-	-	-	81,056	441,371
Northampton	46,737	84	17,493	-	-	-	1,312	-	-	171,556	1,194,639
South Northamptonshire	-	103	899	-	-	-	-	-	-	16,530	369,232
Wellingborough	-	286	1,899	-	-	-	-	-	-	9,830	416,198
NORTHUMBERLAND											
Alnwick	-	98	1,435	-	-	-	-	-	4,956	20,357	316,339
Blyth Valley	-	-	376	-	-	-	-	-	-	37,311	609,525
Castle Morpeth											
Tynedale	-	-	-	-	-	-	-	-	-	24,014	492,690
Wansbeck	-	-	-	-	-	-	-	-	-	11,280	629,401
NORTH YORKSHIRE											
Craven	3,262	-	-	-	-	-	535	-	-	26,430	405,726
Hambleton	-	-	-	-	-	-	-	-	-	12,433	606,098
Harrogate	-	-	-	-	-	-	-	-	-	199,193	1,164,156
Richmondshire	-	-	-	-	-	-	-	-	-	7,480	356,174
Ryedale	-	22	960	-	-	-	-	-	-	19,746	664,376
Scarborough	456	243	3,208	-	165	-	-	-	-	190,835	1,014,196
Selby	-	-	-	-	-	-	-	-	-	34,940	832,865
York	739	-	6,352	**	**	125	-	**	**	110,063	614,690
NOTTINGHAMSHIRE											
Ashfield	-	-	-	-	-	-	-	-	-	49,361	905,845
Bassetlaw											
Broxtowe	-	-	-	824	9,608	-	-	-	-	75,732	911,273
Gedling	-	-	300	-	400	50	-	-	-	56,809	865,232
Mansfield	-	-	-	-	-	-	-	-	-	58,503	940,758
Newark	-	-	-	-	-	-	-	-	-	63,468	736,605
Nottingham	-	-	-	-	-	-	-	-	18,000	341,587	2,772,983
Rushcliffe	-	-	-	-	-	-	-	-	-	58,235	791,123
OXFORDSHIRE											
Cherwell	-	-	-	-	-	-	-	-	-	99,192	700,143
Oxford	-	**	2,470	-	-	-	-	130,000	-	421,262	570,344
South Oxfordshire	-	1,986	-	-	-	-	-	38,093	-	42,301	799,172
Vale of White Horse	-	-	2,100	-	-	-	-	-	-	37,297	733,743
West Oxfordshire											

CAPITAL EXPENDITURE ON REPLACEMENT VEHICLES				COSTS OF COLLECTION					
				COST PER TONNE					
Revenue (96)	Loan (97)	Repairs & Renewals Fund (98)	Lease (99)	Gross (100)	Net (101)	Net cost per domestic hereditament (102)	Net cost per head of population (103)	Waste collected per head of population (104)	Local Authority
£'000	£'000	£'000	£'000	£	£	£	£	kg	
									NON-MET DISTRICTS-ENGLAND
									LEICESTERSHIRE
48	-	-	-	36.51	34.39	18.81	6.90	201	Blaby
-	-	-	69	27.90	25.04	19.13	7.04	281	Charnwood
-	-	-	25	**	**	23.42	8.73	**	Harborough
-	-	-	35	25.16	23.73	16.86	6.36	268	Hinckley & Bosworth
-	-	21	291	19.28	16.67	23.39	8.69	545	Leicester
									Melton
-	-	-	61	33.93	32.39	25.62	9.79	298	North West Leicestershire
-	-	16	-	18.47	15.48	12.74	4.53	274	Oadby & Wigston
38	-	-	-	23.45	22.43	22.24	7.00	312	Rutland
									LINCOLNSHIRE
-	-	59	-	37.17	34.27	20.56	8.27	241	Boston
									East Lindsey
-	-	-	-	20.20	18.24	17.56	7.10	389	Lincoln
-	-	74	-	23.73	22.74	21.46	7.94	351	North Kesteven
									South Holland
-	-	-	-	23.61	22.33	21.23	8.34	373	South Kesteven
-	-	-	-	30.00	29.36	24.59	9.38	319	West Lindsey
									NORFOLK
-	-	-	38	37.99	35.28	18.87	7.36	207	Breckland
-	-	-	124	27.20	25.60	18.90	7.26	277	Broadland
-	-	-	62	29.06	26.40	20.43	8.92	335	Great Yarmouth
									Kings Lynn & West Norfolk
-	-	-	-	25.66	23.78	16.64	7.47	307	North Norfolk
-	-	-	96	30.20	24.33	18.87	7.63	313	Norwich
-	-	42	-	**	**	14.47	5.60	**	South Norfolk
									NORTHAMPTONSHIRE
-	-	2	-	15.46	12.93	17.47	6.59	535	Corby
-	-	32	-	24.98	23.75	17.95	6.73	282	Daventry
									East Northamptonshire
-	-	-	35	18.01	15.22	15.65	6.17	406	Kettering
-	-	-	72	28.33	24.77	18.80	7.28	294	Northampton
-	34	-	-	25.61	24.51	14.97	5.60	228	South Northamptonshire
-	-	-	-	23.34	22.80	16.85	6.45	283	Wellingborough
									NORTHUMBERLAND
-	-	-	65	35.20	33.59	27.14	10.87	329	Alnwick
-	-	-	86	17.40	16.39	20.32	7.79	475	Blyth Valley
									Castle Morpeth
-	-	-	-	19.10	18.20	22.91	9.04	492	Tynedale
-	-	-	-	26.43	25.96	25.62	10.12	390	Wansbeck
									NORTH YORKSHIRE
-	-	-	-	26.76	25.12	20.75	8.38	334	Craven
-	-	33	-	21.33	20.90	22.01	8.00	383	Hambleton
-	-	-	129	22.50	19.21	21.37	8.25	429	Harrogate
-	-	-	-	15.81	15.49	24.46	7.85	507	Richmondshire
-	-	94	-	14.87	14.44	19.92	7.62	528	Ryedale
-	-	-	72	26.47	22.28	23.44	9.93	446	Scarborough
-	-	89	-	33.90	32.53	27.97	10.16	312	Selby
**	**	**	**	**	**	15.44	5.99	444	York
									NOTTINGHAMSHIRE
-	-	-	95	22.83	21.64	22.05	8.56	393	Ashfield
									Bassetlaw
-	-	-	104	**	**	22.57	**	**	Broxtowe
-	-	3	62	30.73	28.84	21.14	8.25	286	Gedling
-	-	-	70	25.95	24.44	24.15	9.45	387	Mansfield
-	-	-	65	22.39	20.59	18.48	7.05	337	Newark
-	-	-	114	25.62	22.96	25.56	10.01	439	Nottingham
-	-	-	-	18.54	17.25	22.15	8.53	485	Rushcliffe
									OXFORDSHIRE
-	-	-	72	24.10	21.00	17.50	6.20	283	Cherwell
-	-	-	-	28.18	15.70	15.50	4.90	290	Oxford
-	-	-	-	18.60	17.66	16.99	6.06	343	South Oxfordshire
-	-	13	-	26.44	25.15	19.53	6.98	276	Vale of White Horse
									West Oxfordshire

Local Authority	POPULATION & AREA			NUMBER OF HEREDITAMENTS				WASTE COLLECTED – BY WEIGHT				
											% OF TOTAL WASTE COLLECTED BY CONTRACTORS	
	Population at 30.6.83	Area	Density of population at 30.6.83	Domestic	Commercial	Industrial	Other	Total weight of all waste	Actual or estimated weight of all waste	Estimated % of waste weighed	Routine collections	Abnormal circumstances
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	'000	hectares	per hectare					tonnes		%	%	%
NON-MET DISTRICTS-ENGLAND												
SHROPSHIRE												
Bridgnorth	50.2	63,367	0.79	18,331	2,096	152	628	17,761	E	-	-	-
North Shropshire	50.3	67,955	0.74	18,093	2,608	111	632	**	**	-	-	-
Oswestry												
Shrewsbury & Atcham	88.5	60,235	1.47	33,806	4,159	129	841	28,560	E	-	-	-
South Shropshire	34.2	102,756	0.33	14,179	1,954	69	679	9,483	E	8	-	-
The Wrekin												
SOMERSET												
Mendip	91.8	73,882	1.24	34,180	6,289	172	1,099	26,500	E	21	100	-
Sedgemoor	90.9	56,775	1.60	34,469	5,823	143	992	34,548	E	-	-	-
Taunton Deane	88.3	45,834	1.93	34,117	6,886	131	887	29,000	E	-	100	-
West Somerset												
Yeovil	135.2	95,946	1.41	52,103	10,538	348	1,447	36,000	E	-	-	-
STAFFORDSHIRE												
Cannock Chase	85.5	7,890	10.84	30,921	4,154	263	405	26,500	E	-	-	-
East Staffordshire	93.3	38,820	2.45	33,778	5,453	178	717	43,000	E	-	-	-
Lichfield	89.5	33,004	2.71	31,264	4,678	210	507	25,000	E	90	-	-
Newcastle-under-Lyme	119.1	21,109	5.64	45,536	6,150	182	708	34,000	E	50	-	-
South Staffordshire	99.9	40,857	2.45	36,079	4,178	132	627	32,500	E	3	-	-
Stafford	116.3	59,938	1.94	42,489	5,531	115	923	38,785	E	40	-	-
Staffordshire Moorlands												
Stoke-on-Trent	250.4	9,278	26.99	98,289	12,619	785	1,355	79,525	E	70	-	-
Tamworth	66.5	3,095	21.49	24,008	3,674	189	210	31,000	E	-	25	-
SUFFOLK												
Babergh	75.6	59,529	1.27	28,674	5,061	181	762	21,000	E	2	-	-
Forest Heath	34.0	37,397	1.44	19,722	4,138	169	459	15,000	E	2	-	-
Ipswich	120.2	4,029	29.83	46,512	7,282	117	507	**	**	-	-	-
Mid Suffolk	72.3	87,084	0.83	27,442	3,760	121	822	**	**	**	-	-
St Edmundsbury	89.0	65,689	1.35	32,563	7,548	257	876	25,000	E	60	1	-
Suffolk Coastal	99.9	88,938	1.12	39,611	5,758	129	1,266	26,500	E	25	-	-
Waveney	101.5	36,997	2.74	41,955	6,039	206	1,125	25,168	A	97	-	-
SURREY												
Elmbridge	111.1	9,667	11.49	43,905	9,896	155	726	31,300	E	-	-	-
Epsom & Ewell	68.0	3,411	19.94	24,962	4,094	36	283	18,361	A	100	-	-
Guildford	124.7	27,101	4.60	45,938	8,974	151	886	34,750	E	7	-	-
Mole Valley	76.9	25,851	2.97	29,455	4,470	100	643	23,568	E	-	-	-
Reigate & Banstead	116.7	12,914	9.04	43,959	9,313	137	646	24,826	A	100	-	-
Runnymede	72.6	7,822	9.28	26,276	4,829	130	470	21,320	E	-	-	-
Spelthorne	91.1	5,617	16.22	35,302	9,178	275	594	27,017	A	98	-	-
Surrey Heath	77.0	9,651	7.98	26,373	4,251	94	451	22,056	A	100	-	-
Tandridge												
Waverley	112.7	34,543	3.26	41,154	6,976	127	855	31,000	E	100	-	-
Woking	83.9	6,339	13.19	32,047	6,920	128	450	21,286	E	8	-	-
WARWICKSHIRE												
North Warwickshire												
Nuneaton & Bedworth	113.6	7,898	14.38	41,580	7,129	322	462	30,076	A	100	-	-
Rugby												
Stratford-on-Avon	101.9	97,739	1.04	38,572	6,948	280	1,240	25,713	A	100	-	-
Warwick	115.6	28,253	4.09	43,856	8,933	286	1,123	32,932	E	100	-	-
WEST SUSSEX												
Adur												
Arun	122.7	22,092	5.55	53,961	11,124	238	1,096	33,637	A	100	-	-
Chichester	99.8	78,677	1.27	40,322	6,686	163	1,473	31,007	E	70	-	-
Crawley	82.8	4,408	18.78	30,496	8,623	179	356	29,500	E	-	-	-
Horsham	103.2	53,122	1.94	39,206	7,703	250	1,015	26,159	E	40	-	-
Mid Sussex	118.9	33,213	3.58	43,489	7,325	162	780	28,193	E	74	-	-
Worthing	93.4	3,264	28.62	40,755	9,021	161	539	27,575	A	100	-	-
WILTSHIRE												
Kennet	66.1	95,806	0.69	22,519	4,222	49	815	24,562	E	24	-	-
North Wiltshire	106.7	76,999	1.39	37,105	6,311	182	1,004	30,000	E	80	-	-
Salisbury	102.5	100,496	1.02	36,319	5,030	124	1,164	35,000	E	-	-	-
Thamesdown												
West Wiltshire												
Isles of Scilly	2.0	1,635	1.22	865	258	7	87	1,450	E	-	-	-

WASTE COLLECTED – BY TYPE			WASTE COLLECTED – BY METHOD OF STORAGE				METHODS OF COLLECTION						
							HOUSEHOLD WASTE						
Household waste (13)	Commercial waste (14)	Industrial waste (15)	Contained in dustbins (16)	Contained in disposable sacks (17)	Contained in bulk storage containers (18)	Other (19)	Backdoor collect & return (20)	Kerbside (21)	Other collect & return (22)	Skep (23)	Other normal methods (24)	Special collections (25)	Local Authority
%	%	%	%	%	%	%	%	%	%	%	%	%	
													NON-MET DISTRICTS-ENGLAND
													SHROPSHIRE
89	9	2	3	80	9	8	55	14	30	1	–	–	Bridgnorth
98	2	–	–	100	–	–	100	–	–	–	–	–	North Shropshire
													Oswestry
85	15	–	20	70	2	8	76	–	18	–	–	6	Shrewsbury & Atcham
89	8	3	89	4	–	7	28	60	–	10	–	2	South Shropshire
													The Wrekin
													SOMERSET
92	8	–	**	**	**	**	1	99	–	–	–	–	Mendip
90	9	1	93	2	2	3	–	100	–	–	–	–	Sedgemoor
89	6	5	84	6	5	5	–	100	–	–	–	–	Taunton Deane
													West Somerset
95	4	1	–	98	–	2	1	98	–	–	–	1	Yeovil
													STAFFORDSHIRE
94	6	–	85	1	8	6	98	–	–	–	2	–	Cannock Chase
84	16	–	2	89	9	–	97	–	–	–	1	2	East Staffordshire
90	10	–	–	93	6	1	100	–	–	–	–	–	Lichfield
84	16	–	61	6	12	21	100	–	–	–	–	–	Newcastle-under-Lyme
88	11	1	–	82	15	3	97	–	–	–	1	2	South Staffordshire
85	15	–	–	80	20	–	98	–	–	–	–	2	Stafford
													Staffordshire Moorlands
76	9	15	9	62	9	20	92	–	–	–	3	5	Stoke-on-Trent
90	10	–	80	–	20	–	5	–	85	–	10	–	Tamworth
													SUFFOLK
92	8	–	64	31	–	5	–	29	30	40	–	1	Babergh
86	7	7	–	93	7	–	64	35	–	–	–	1	Forest Heath
80	20	–	77	–	19	4	–	–	–	100	–	–	Ipswich
**	**	**	**	**	**	**	**	**	**	**	**	**	Mid Suffolk
78	15	7	60	20	–	20	50	45	–	–	–	5	St Edmundsbury
99	1	–	5	95	–	–	–	90	–	–	–	10	Suffolk Coastal
98	2	–	91	5	3	1	–	–	–	99	–	1	Waveney
													SURREY
94	5	1	77		23	–	100	–	–	–	–	–	Elmbridge
70	20	10	**	**	**	**	–	–	–	100	–	–	Epsom & Ewell
80	20	–	–	80	13	7	97	–	–	–	–	3	Guildford
89	11	–	6	89	5	–	100	–	–	–	–	–	Mole Valley
93	5	–	84	6	9	1	–	–	–	88	7	5	Reigate & Banstead
86	13	1	86	———	13	1	–	–	–	95	3	2	Runnymede
92	8	–	90	———	9	1	21	–	–	75	3	1	Spelthorne
95	5	–	–	95	5	–	99	–	–	–	*	1	Surrey Heath
													Tandridge
98	2	–	–	94	–	6	100	–	–	–	–	–	Waverley
90	10	–	–	85	15	–	89	–	–	–	6	5	Woking
													WARWICKSHIRE
													North Warwickshire
88	5	7	88	–	7	5	95	–	–	–	–	5	Nuneaton & Bedworth
													Rugby
84	16	–	–	93	7	–	100	–	–	–	–	–	Stratford-on-Avon
86	12	2	86	2	10	2	100	–	–	–	–	–	Warwick
													WEST SUSSEX
													Adur
90	10	–	96	1	3	–	–	–	–	98	2	–	Arun
75	20	5	60	30	2	8	98	–	–	–	–	2	Chichester
76	22	2	65	1	29	5	–	5	10	85	–	–	Crawley
90	10	———	84	–	10	6	–	–	–	93	1	6	Horsham
70	30	———	70	24	6	–	–	–	–	71	26	3	Mid Sussex
95	5	–	95	–	5	–	–	–	–	94	5	1	Worthing
													WILTSHIRE
93	5	2	75	22	–	3	1	89	–	–	–	10	Kennet
89	10	1	75	20	–	5	5	85	5	–	–	5	North Wiltshire
92	8	–	85	10	5	–	30	65	–	–	5	–	Salisbury
													Thamesdown
													West Wiltshire
75	25	–	75	10	–	15	100	–	–	–	–	–	Isles of Scilly

Local Authority	METHODS OF COLLECTION: COMMERCIAL WASTE: Backdoor collect & return (26)	Kerbside (27)	Other collect & return (28)	Skep (29)	Other normal methods (30)	Special collections (31)	Collection system (See Notes) (32)	DISPOSABLE SACKS USED: Paper (33)	Plastic (34)
	%	%	%	%	%	%		'000	'000
NON-MET DISTRICTS-ENGLAND									
SHROPSHIRE									
Bridgnorth	16	42	36	6	-	-	T	-	1,337
North Shropshire	100	-	-	-	-	-	T	-	1,300
Oswestry									
Shrewsbury & Atcham	80	-	18	-	-	2	T	-	2,300
South Shropshire	15	40	35	-	-	10	T	-	13
The Wrekin									
SOMERSET									
Mendip	-	99	1	-	*	*	B	-	180
Sedgemoor	-	100	-	-	-	-	T	-	22
Taunton Deane	-	100	-	-	-	-	**	-	30
West Somerset									
Yeovil	-	98	1	-	-	1	T	-	3,400
STAFFORDSHIRE									
Cannock Chase	80	-	-	-	20	-	T	-	5
East Staffordshire	3	-	-	-	96	1	T	-	3,481
Lichfield	32	-	-	-	65	3	T	-	1,800
Newcastle-under-Lyme	100	-	-	-	-	-	T	-	330
South Staffordshire	75	-	-	-	24	1	T	-	2,400
Stafford	98	-	-	-	-	2	C	-	3,000
Staffordshire Moorlands									
Stoke-on-Trent	89	-	-	-	10	1	C	8	5,919
Tamworth	90	-	5	-	5	-	T	-	-
SUFFOLK									
Babergh	100	-	-	-	-	-	T	-	500
Forest Heath	86	-	-	-	14	-	T	-	1,800
Ipswich	100	-	-	-	-	-	T	-	-
Mid Suffolk	**	**	**	**	**	**	C	**	**
St Edmundsbury	95	-	-	-	-	5	B	-	750
Suffolk Coastal	33	66	-	-	-	1	C	-	2,700
Waveney	90	-	-	-	9	1	T	-	30
SURREY									
Elmbridge	100	-	-	-	-	-	T	-	2,500
Epsom & Ewell	-	-	-	100	-	-	T	-	23
Guildford	7	-	-	-	93	-	T	-	3,200
Mole Valley	100	-	-	-	-	-	T	-	2,800
Reigate & Banstead	-	-	-	-	95	5	T	-	64
Runnymede	-	-	3	-	94	3	T	-	50
Spelthorne	14	-	-	10	76	-	T	-	4
Surrey Heath	100	-	-	-	-	*	T	-	2,500
Tandridge									
Waverley	100	-	-	-	-	-	T	-	4,035
Woking	-	-	-	-	99	1	T	-	2,200
WARWICKSHIRE									
North Warwickshire									
Nuneaton & Bedworth	13	-	-	2	85	-	T	-	60
Rugby									
Stratford-on-Avon	100	-	-	-	-	-	T	-	2,800
Warwick	70	-	-	-	28	2	T	17	38
WEST SUSSEX									
Adur									
Arun	-	20	-	15	50	15	T	-	26
Chichester	95	-	-	-	2	3	T	39	23
Crawley	-	5	5	-	90	-	T	12	94
Horsham	-	-	-	22	72	6	T	-	-
Mid Sussex	-	-	-	62	36	2	T	-	1,000
Worthing	-	-	-	60	15	25	T	-	-
WILTSHIRE									
Kennet	-	96	-	-	-	4	T	-	244
North Wiltshire	5	88	5	-	-	2	B	-	-
Salisbury	10	85	-	-	5	-	T	-	-
Thamesdown									
West Wiltshire									
Isles of Scilly	100	-	-	-	-	-	B	-	22

NUMBER OF BULK STORAGE CONTAINERS		PROVISION OF DUSTBINS/ SACKHOLDERS		FREQUENCY OF COLLECTION PER WEEK						Local Authority
				NORMAL HOUSEHOLD WASTE			COMMERCIAL WASTE			
With compaction (35)	Without compaction (36)	Charge (See Notes) (37)	Number (38)	Twice or more (39)	Once (40)	Less than once (41)	Twice or more (42)	Once (43)	Less than once (44)	
				%	%	%	%	%	%	
										NON-MET DISTRICTS-ENGLAND
										SHROPSHIRE
-	140	F	703	-	98	2	-	100	-	Bridgnorth
-	-	N	-	-	85	15	-	100	-	North Shropshire
										Oswestry
-	40	N	-	-	98	2	2	98	-	Shrewsbury & Atcham
-	-	N	-	-	56	44	10	48	42	South Shropshire
										The Wrekin
										SOMERSET
-	60	N	-	-	100	-	1	99	-	Mendip
-	-	N	**	-	100	-	5	95	-	Sedgemoor
-	100	C	-	-	100	-	20	80	-	Taunton Deane
										West Somerset
-	-	N	-	-	100	-	1	99	-	Yeovil
										STAFFORDSHIRE
-	290	N	-	-	100	-	20	80	-	Cannock Chase
471	-	C	372	-	100	-	-	94	6	East Staffordshire
-	403	N	45	-	100	-	2	-	98	Lichfield
-	606	F	3,726	-	100	-	2	98	-	Newcastle-under-Lyme
-	220	C	476	-	100	-	-	100	-	South Staffordshire
-	610	F	800	-	100	-	20	78	2	Stafford
										Staffordshire Moorlands
-	1,031	F	7,244	-	100	-	5	95	-	Stoke-on-Trent
481	-	F	600	-	100	-	10	90	-	Tamworth
										SUFFOLK
-	-	N	-	-	100	-	1	99	-	Babergh
**	**	N	-	1	98	1	-	100	-	Forest Heath
**	**	N	-	-	100	-	25	75	-	Ipswich
-	-	C	**	-	100	-	2	98	-	Mid Suffolk
-	-	N	-	-	100	-	20	80	-	St Edmundsbury
-	-	N	-	-	100	-	5	95	-	Suffolk Coastal
-	162	N	-	-	100	-	1	95	4	Waveney
										SURREY
-	1,600	F	250	-	100	-	25	75	-	Elmbridge
-	549	F	53	-	100	-	2	98	-	Epsom & Ewell
-	1,252	N	-	-	100	-	30	70	-	Guildford
300	-	F	-	-	100	-	2	98	-	Mole Valley
-	377	C	48	-	100	-	5	90	5	Reigate & Banstead
-	600	N	5	-	100	-	20	80	-	Runnymede
-	401	N	-	1	99	-	30	65	5	Spelthorne
-	522	C	-	-	100	-	1	99	-	Surrey Heath
										Tandridge
-	-	C	80	-	100	-	5	95	-	Waverley
-	350	F	250	-	100	-	24	76	-	Woking
										WARWICKSHIRE
										North Warwickshire
-	876	C	827	-	100	-	66	34	-	Nuneaton & Bedworth
										Rugby
-	328	C	584	-	100	-	8	92	-	Stratford-on-Avon
-	787	N	2,237	-	100	-	20	80	-	Warwick
										WEST SUSSEX
										Adur
-	410	N	-	-	100	-	6	94	-	Arun
-	60	N	-	-	100	-	-	100	-	Chichester
-	1,000	N	-	-	100	-	15	85	-	Crawley
-	628	N	-	-	85	15	5	90	5	Horsham
-	292	N	-	-	100	-	5	95	-	Mid Sussex
-	500	N	-	-	100	-	13	82	5	Worthing
										WILTSHIRE
-	-	N	-	-	99	1	2	98	-	Kennet
-	-	C	**	-	100	-	5	95	-	North Wiltshire
-	210	N	-	10	90	-	80	20	-	Salisbury
										Thamesdown
										West Wiltshire
-	-	C	50	-	100	-	50	50	-	Isles of Scilly

Local Authority	NUMBER OF BOTTLE BANKS: Owned & operated by the local authority (45)	NUMBER OF BOTTLE BANKS: Other (46)	WASTE OIL COLLECTION POINTS: Owned & operated by the local authority (47)	WASTE OIL COLLECTION POINTS: Other (e.g. garages) (48)	AMOUNT OF WASTE: Paper (49)	AMOUNT OF WASTE: Abandoned Vehicles (50)	AMOUNT OF WASTE: Glass (51)	AMOUNT OF WASTE: Oil (52)	AMOUNT OF WASTE: Ferrous Metals (53)
					tonnes	no.	tonnes	'000 litres	tonnes
NON-MET DISTRICTS-ENGLAND									
SHROPSHIRE									
Bridgnorth	5	-	-	-	-	-	45	-	-
North Shropshire	4	-	-	**	-	-	96	-	-
Oswestry									
Shrewsbury & Atcham	-	-	1	22	-	3	-	**	-
South Shropshire	-	1	-	-	-	5	-	-	-
The Wrekin									
SOMERSET									
Mendip	-	-	-	-	-	1	-	-	-
Sedgemoor	-	-	-	-	-	135	-	-	-
Taunton Deane	-	-	-	-	-	56	-	-	-
West Somerset									
Yeovil	-	-	-	-	-	37	-	-	-
STAFFORDSHIRE									
Cannock Chase	3	-	-	-	-	5	101	-	-
East Staffordshire	2	-	-	-	-	14	127	-	-
Lichfield	1	1	-	2	-	15	85	-	-
Newcastle-under-Lyme	-	-	-	-	-	8	-	-	-
South Staffordshire	-	-	-	-	-	8	-	-	-
Stafford	5	-	-	-	-	3	340	-	-
Staffordshire Moorlands									
Stoke-on-Trent	-	-	-	-	1,019	35	-	-	-
Tamworth	-	-	-	1	-	40	-	-	-
SUFFOLK									
Babergh	-	-	-	-	-	93	-	-	-
Forest Heath	-	12	-	-	-	14	-	-	-
Ipswich	-	-	-	-	**	**	-	-	**
Mid Suffolk	-	-	**	**	**	**	-	**	**
St Edmundsbury	-	5	-	-	-	105	120	-	-
Suffolk Coastal	-	-	-	-	-	28	-	-	-
Waveney	11	-	-	-	-	-	400	-	-
SURREY									
Elmbridge	-	8	-	-	-	120	500	-	-
Epsom & Ewell	-	-	-	-	-	26	-	-	-
Guildford	-	3	1	1	2,428	132	350	1	-
Mole Valley	-	18	-	-	-	-	450	-	-
Reigate & Banstead	27	-	-	-	826	-	456	-	-
Runnymede	-	-	-	-	-	112	-	-	-
Spelthorne	-	6	-	**	-	65	220	-	-
Surrey Heath	-	5	-	7	-	128	200	-	-
Tandridge									
Waverley	-	11	-	1	-	80	622	-	-
Woking	-	-	-	-	-	**	-	-	-
WARWICKSHIRE									
North Warwickshire									
Nuneaton & Bedworth	5	1	-	-	-	42	264	-	-
Rugby									
Stratford-on-Avon	3	-	-	-	-	22	289	-	-
Warwick	-	-	-	-	-	49	-	-	-
WEST SUSSEX									
Adur									
Arun	-	12	-	-	-	134	442	-	-
Chichester	10	-	2	-	-	131	357	3	-
Crawley	-	-	-	-	-	**	-	-	-
Horsham	-	11	1	-	-	20	533	-	-
Mid Sussex	10	-	-	-	-	71	240	-	-
Worthing	-	8	-	1	2,682	179	525	6	-
WILTSHIRE									
Kennet	-	-	-	-	58	16	-	-	56
North Wiltshire	-	-	1	-	-	490	-	3	-
Salisbury	2	-	-	-	1,705	163	440	-	-
Thamesdown									
West Wiltshire									
Isles of Scilly	-	-	-	-	-	50	-	-	-

RECLAIMED		NUMBER OF LOCAL AUTHORITY'S COLLECTION VEHICLES				NUMBER OF CONTRACTORS' COLLECTION VEHICLES				
		SPECIALIST				SPECIALIST				
Non-Ferrous Metals (54)	Other (55)	With compaction (56)	Without compaction (57)	General purpose (58)	Total (59)	With compaction (60)	Without compaction (61)	General purpose (62)	Total (63)	Local Authority
tonnes	tonnes									
										NON-MET DISTRICTS-ENGLAND
										SHROPSHIRE
-	-	8	2	-	10	-	-	-	-	Bridgnorth
-	-	10	-	2	12	-	-	-	-	North Shropshire
										Oswestry
-	-	12	1	3	16	-	-	-	-	Shrewsbury & Atcham
-	-	5	-	-	5	-	-	-	-	South Shropshire
										The Wrekin
										SOMERSET
-	-	##	##	##	##	10	-	1	11	Mendip
-	-	15		1	16	-	-	-	-	Sedgemoor
-	-	##	##	##	##	9	-	1	10	Taunton Deane
										West Somerset
-	-	13	1	3	17	-	-	-	-	Yeovil
										STAFFORDSHIRE
-	-	11	-	1	12	-	-	-	-	Cannock Chase
-	-	16	-	5	21	-	-	-	-	East Staffordshire
-	-	12	2	-	14	-	-	-	-	Lichfield
-	-	22	1	2	25	-	-	-	-	Newcastle-under-Lyme
-	-	12	1	1	14	-	-	-	-	South Staffordshire
-	-	22	-	1	23	-	-	-	-	Stafford
										Staffordshire Moorlands
-	-	33	4	3	40	-	-	-	-	Stoke-on-Trent
-	-	##	##	##	##	7	-	-	7	Tamworth
										SUFFOLK
-	-	16	1	2	19	-	-	-	-	Babergh
-	-	7	-	2	9	-	-	-	-	Forest Heath
**	**	17	-	-	17	-	-	-	-	Ipswich
**	**	**	**	**	**	-	-	-	-	Mid Suffolk
-	-	15	-	2	17	**	**	**	**	St Edmundsbury
-	-	15	-	5	20	-	-	-	-	Suffolk Coastal
-	-	18	-	1	19	-	-	-	-	Waveney
										SURREY
-	-	21	-	1	22	-	-	-	-	Elmbridge
-	-	10	-	1	11	-	-	-	-	Epsom & Ewell
-	-	23	2	3	28	-	-	-	-	Guildford
-	-	17	2	2	21	-	-	-	-	Mole Valley
-	-	23	-	5	28	-	-	-	-	Reigate & Banstead
-	-	12	-	-	12	-	-	-	-	Runnymede
-	-	14	-	2	16	-	-	-	-	Spelthorne
-	-	15	-	-	15	-	-	-	-	Surrey Heath
										Tandridge
-	-	18	-	-	18	-	-	-	-	Waverley
-	-	11	1	-	12	-	-	-	-	Woking
										WARWICKSHIRE
										North Warwickshire
-	-	13	2	2	17	-	-	-	-	Nuneaton & Bedworth
										Rugby
-	-	17	-	-	17	-	-	-	-	Stratford-on-Avon
-	-	20	-	1	21	-	-	-	-	Warwick
										WEST SUSSEX
										Adur
-	-	26	-	-	26	-	-	-	-	Arun
-	-	24	1	1	26	-	-	-	-	Chichester
-	-	15	2	-	17	-	-	-	-	Crawley
-	-	18	1	1	20	-	-	-	-	Horsham
-	-	21	-	-	21	-	-	-	-	Mid Sussex
-	-	15	3	1	19	-	-	-	-	Worthing
										WILTSHIRE
2	-	10	-	2	12	-	-	-	-	Kennet
-	-	17	1	-	18	-	-	-	-	North Wiltshire
-	-	22	1	2	25	-	-	-	-	Salisbury
										Thamesdown
										West Wiltshire
-	-	1	-	1	2	-	-	-	-	Isles of Scilly

WASTE COLLECTION STATISTICS

Local Authority	LOCAL AUTHORITY STAFF EMPLOYED AT 31.3.84								EXPENDITURE			
	Drivers (64)	Loaders (65)	Drivers/ Loaders (66)	Other manual (67)	Vehicle maintenance (68)	Technical & administrative (69)	Total (70)	Contractors' manual employees (71)	Employees (72)	Premises/ depots (73)	Provision of disposable sacks (74)	Provision of dustbins (75)
	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	£	£	£	£
NON-MET DISTRICTS-ENGLAND												
SHROPSHIRE												
Bridgnorth	7	11	-	-	2	-	20	-	194,163	4,108	34,631	-
North Shropshire	12	15	-	-	-	2	29	-	197,547	17,397	23,285	-
Oswestry												
Shrewsbury & Atcham	4	31	4	1	1	2	45	1	404,761	36,735	69,809	-
South Shropshire	-	8	4	-	-	1	13	-	102,920	8,480	783	-
The Wrekin												
SOMERSET												
Mendip	**	**	**	**	**	1	1	28	9,119	-	-	-
Sedgemoor	12	26	-	-	**	**	38	-	302,291	10,964	1,472	528
Taunton Deane	**	**	**	**	**	**	**	22	-	-	-	5,365
West Somerset												
Yeovil	10	21	2	2	-	4	39	-	303,550	15,505	92,963	-
STAFFORDSHIRE												
Cannock Chase	9	37	-	-	3	4	53	-	403,604	12,031	4,588	-
East Staffordshire	7	34	15	1	3	3	63	-	464,247	34,312	86,836	7,242
Lichfield	12	30	6	3	3	-	54	-	396,829	9,750	74,200	228
Newcastle-under-Lyme	20	77	-	-	2	3	102	-	705,323	1,502	14,462	15,668
South Staffordshire	-	34	13	-	2	2	51	-	398,443	17,780	70,133	2,799
Stafford	13	34	-	-	5	7	59	-	468,397	18,101	108,466	4,409
Staffordshire Moorlands												
Stoke-on-Trent	-	81	31	2	4	12	130	-	1,253,639	128,365	134,069	55,255
Tamworth	**	**	**	**	**	1	1	19	177,701	4,456	-	10,000
SUFFOLK												
Babergh	-	16	18	-	3	3	40	-	295,769	7,591	16,954	-
Forest Heath	2	15	4	-	1	-	22	-	178,337	1,765	45,576	-
Ipswich	-	38	27	-	7	3	75	-	620,118	col 77	2,879	
Mid Suffolk	**	**	**	**	**	**	**	-	254,611	22,236	1,877	1,821
St Edmundsbury	-	21	16	-	-	-	37	**	331,763	5,887	24,937	-
Suffolk Coastal	-	14	16	-	2	4	36	-	413,993	9,640	137,827	-
Waveney	16	35	6	-	2	2	61	-	512,733	-	9,702	-
SURREY												
Elmbridge	13	45	7	-	8	3	76	-	651,344	13,458	78,756	4,839
Epsom & Ewell	-	27	8	-	3	7	45	-	240,610	41,565	676	-
Guildford	22	45	15	5	11	8	106	-	788,934	33,480	91,049	-
Mole Valley	-	35	12	4	2	1	54	-	395,193	42,573	76,536	-
Reigate & Banstead	20	52	11	5	4	6	98	-	938,113	39,629	6,582	450
Runnymede	9	32	4	-	2	2	49	-	433,515	19,000	3,440	-
Spelthorne	10	44	9	-	3	3	69	-	562,561	16,759	572	-
Surrey Heath	11	21	8	-	2	2	44	-	354,104	14,834	66,073	2,640
Tandridge												
Waverley	7	28	5	-	2	5	47	-	517,926	54,159	110,917	-
Woking	13	31	-	-	2	2	48	-	381,233	4,257	86,430	6,256
WARWICKSHIRE												
North Warwickshire												
Nuneaton & Bedworth	14	48	9	-	3	2	76	-	611,133	6,696	6,498	8,670
Rugby												
Stratford-on-Avon	-	34	13	-	4	2	53	-	481,055	55,402	131,046	2,087
Warwick	-	59	18	-	2	2	81	-	626,926	11,965	3,227	18,217
WEST SUSSEX												
Adur												
Arun	16	54	11	1	4	4	90	-	749,334	31,860	-	-
Chichester	17	49	7	-	3	4	80	-	706,229	23,020	6,444	-
Crawley	12	30	9	-	5	4	60	-	434,353	34,865	-	-
Horsham	12	44	8	-	5	4	73	-	556,934	26,839	-	-
Mid Sussex	-	35	39	-	2	1	77	-	633,578	45,499	30,916	-
Worthing	-	44	16	4	3	4	71	-	704,023	25,305	-	-
WILTSHIRE												
Kennet	-	22	11	-	1	2	36	-	261,566	10,742	4,512	188
North Wiltshire	-	28	18	-	2	2	50	-	335,907	24,083	16,190	-
Salisbury	-	35	20	3	-	5	63	-	529,099	35,467	3,500	-
Thamesdown												
West Wiltshire												
Isles of Scilly	-	1	1	-	1	-	3	-	27,484	-	33	329

EXPENDITURE						INCOME			
			AGENCY SERVICES			COLLECTION SERVICES			
Transport & moveable plant (76)	Establishment expenses (77)	Other running expenses (78)	Other local authorities (79)	Contractors (80)	Gross Expenditure (81)	Commercial waste (82)	Bulky household waste (83)	Other (84)	Local Authority
£	£	£	£	£	£	£	£	£	
									NON-MET DISTRICTS-ENGLAND
									SHROPSHIRE
103.005	4.947	3.396	2.341	-	348.611	27.768	394	6.532	Bridgnorth
124.455	32.397	1.872	5.272	-	402.225	3.199	-	-	North Shropshire
									Oswestry
138.335	33.643	32.636	-	-	715.919	93.343	-	-	Shrewsbury & Atcham
91.794	18.190	2.628	4.384	-	229.179	11.788	968	150	South Shropshire
									The Wrekin
									SOMERSET
12.206	29.278	70.027	-	317.518	438.148	42.997	-	1.521	Mendip
186.059	97.722	8.235	-	-	607.271	33.542	341	411	Sedgemoor
-	34.323	437	-	289.524	329.849	23.350	1.912	-	Taunton Deane
									West Somerset
209.941	86.645	-	-	-	708.604	43.259	-	-	Yeovil
									STAFFORDSHIRE
154.291	41.304	10.253	-	-	626.071	26.931	506	-	Cannock Chase
217.039	61.454	40	-	-	871.170	48.155	147	19.847	East Staffordshire
205.912	55.437	3.076	-	1.544	746.976	72.927	-	3.687	Lichfield
480.050	83.052	9.687	-	-	1.309.744	34.928	19	40.479	Newcastle-under-Lyme
171.053	55.100	3.707	3.138	-	722.153	18.582	1.147	3.529	South Staffordshire
271.234	101.831	9.432	17.427	-	999.297	104.057	1.096	20.017	Stafford
									Staffordshire Moorlands
377.340	137.713	19.988	-	-	2.126.369	137.618	3.994	93.124	Stoke-on-Trent
220.291	54.314	87.182	-	43.887	597.831	28.136	220	22.606	Tamworth
									SUFFOLK
261.517	98.809	881	2.455	1.148	685.124	15.242	90	-	Babergh
75.092	20.275	3.284	-	-	324.329	12.293	-	13.783	Forest Heath
198.224	86.807	col 74	-	-	908.028	111.427	-	19.323	Ipswich
194.528	56.450	30.381	3.538	-	565.442	6.310	-	9.476	Mid Suffolk
198.117	45.714	8.342	-	-	614.760	45.989	7.275	-	St Edmundsbury
218.750	81.359	5.227	15.940	-	882.936	54.679	3.200	2.835	Suffolk Coastal
302.750	8.363	-	5.476	-	839.024	32.831	33.917	-	Waveney
									SURREY
274.577	45.972	9.066	16.168	-	1.094.180	81.352	12.556	21.043	Elmbridge
173.720	94.466	5.773	4.750	-	561.560	39.602	1.021	-	Epsom & Ewell
306.139	40.387	28.433	18.486	-	1.306.910	93.290	4.761	34.160	Guildford
193.065	94.039	3.795	-	793	807.994	47.186	2.305	9.139	Mole Valley
262.566	93.753	30.050	-	-	1.371.143	36.883	6.588	2.357	Reigate & Banstead
114.755	21.672	14.453	11.140	-	617.975	62.075	-	7.353	Runnymede
234.932	67.180	17.744	387	-	900.135	49.084	-	-	Spelthorne
108.948	15.203	124	-	10.362	572.288	55.183	7.382	241	Surrey Heath
									Tandridge
291.047	16.740	6.190	-	-	996.979	68.305	3.419	19.117	Waverley
170.506	4.684	6.038	13.399	-	672.803	69.046	1.728	3.007	Woking
									WARWICKSHIRE
									North Warwickshire
231.078	27.788	76.383	-	-	968.246	103.139	-	27.503	Nuneaton & Bedworth
									Rugby
168.300	64.290	30.830	11.622	-	944.632	87.336	-	1.976	Stratford-on-Avon
166.652	115.411	6.879	10.994	3.337	963.608	81.237	-	-	Warwick
									WEST SUSSEX
									Adur
345.502	51.085	29.469	16.809	-	1.244.039	100.089	10.813	2.142	Arun
234.522	6.815	19.380	-	-	996.410	27.638	-	5.949	Chichester
224.650	50.036	13.789	-	-	737.693	130.106	-	2.000	Crawley
238.836	75.725	33.318	1.078	-	932.730	74.800	18.191	15.506	Horsham
139.677	35.079	11.248	6.809	-	902.806	31.553	**	**	Mid Sussex
231.769	57.695	21.765	8.898	-	1.049.455	46.069	6.654	-	Worthing
									WILTSHIRE
179.416	12.755	633	4.636	-	474.448	17.336	2.805	58.644	Kennet
211.030	51.522	12.000	-	-	650.732	24.734	-	277	North Wiltshire
259.507	44.099	9.482	15.569	-	896.723	56.714	1.510	54.578	Salisbury
									Thamesdown
									West Wiltshire
10.639	40	-	-	-	38.525	4.638	-	392	Isles of Scilly

Local Authority	INCOME										
	SALES OF RECLAIMED WASTE							CONTRIBUTIONS FROM OTHER AUTHORITIES			
	Paper (85)	Abandoned Vehicles (86)	Glass (87)	Oil (88)	Ferrous Metals (89)	Non-Ferrous Metals (90)	Other (91)	Waste Disposal Authority (92)	Other local authorities (93)	Total Income (94)	Total Net Expenditure (95)
	£	£	£	£	£	£	£	£	£	£	£
NON-MET DISTRICTS-ENGLAND											
SHROPSHIRE											
Bridgnorth	-	213	-	-	-	-	-	-	-	33,107	313,504
North Shropshire	-	-	1,539	-	-	-	-	-	843	5,377	396,648
Oswestry											
Shrewsbury & Atcham	-	605	-	-	-	-	-	-	2,337	36,285	659,634
South Shropshire	-	-	-	-	-	-	-	-	-	12,906	216,273
The Wrekin											
SOMERSET											
Mendip	-	-	-	-	-	-	-	-	-	44,318	393,630
Sedgemoor	-	228	-	-	-	-	-	-	-	34,522	572,749
Taunton Deane	-	-	-	-	-	-	-	-	-	25,262	304,587
West Somerset											
Yeovil	-	-	-	-	-	-	-	-	-	43,259	669,345
STAFFORDSHIRE											
Cannock Chase	-	-	2,447	-	-	-	-	-	-	29,884	596,187
East Staffordshire	912	-	3,134	-	-	-	290	-	-	72,483	798,683
Lichfield	-	321	1,695	-	-	-	-	-	-	78,630	668,346
Newcastle-under-Lyme	-	-	-	-	-	-	-	-	-	75,426	1,234,318
South Staffordshire	-	-	-	-	-	-	-	-	-	23,258	698,895
Stafford	-	-	4,317	-	-	-	-	-	-	129,487	869,810
Staffordshire Moorlands											
Stoke-on-Trent	20,510	124	-	-	-	-	-	-	-	275,370	1,850,999
Tamworth	-	-	-	-	-	-	-	-	-	50,962	546,869
SUFFOLK											
Babergh	-	586	-	-	-	-	-	9,525	100	25,543	659,581
Forest Heath	-	-	-	-	-	-	-	-	3,417	29,493	294,836
Ipswich	-	-	-	-	-	-	-	-	-	130,750	777,278
Mid Suffolk	26	-	-	-	-	-	-	26,539	4,170	46,521	518,921
St Edmundsbury	-	-	-	-	-	-	-	11,971	1,639	66,874	547,886
Suffolk Coastal	-	456	-	-	-	-	-	20,572	-	81,742	801,194
Waveney	-	-	820	-	-	-	-	19,006	-	86,574	752,450
SURREY											
Elmbridge	-	-	-	-	-	-	-	-	-	114,951	979,229
Epsom & Ewell	-	-	-	-	-	-	-	-	-	40,623	520,937
Guildford	57,985	-	-	-	-	-	513	11,320	-	204,029	1,102,881
Mole Valley	-	390	-	-	-	-	-	-	-	59,020	748,974
Reigate & Banstead	21,550	-	913	-	-	-	22	-	-	68,315	1,302,828
Runnymede	-	-	-	-	-	-	-	-	-	69,428	548,547
Spelthorne	-	-	-	-	-	-	-	-	-	49,084	851,051
Surrey Heath	-	5,562	-	-	-	-	-	46,753	-	115,121	457,167
Tandridge											
Waverley	-	-	1,245	-	-	-	-	-	-	92,086	904,893
Woking	-	-	-	-	-	-	-	2,039	-	75,820	596,983
WARWICKSHIRE											
North Warwickshire											
Nuneaton & Bedworth	-	-	12,176	-	-	-	-	-	-	142,818	825,428
Rugby											
Stratford-on-Avon	-	298	7,466	-	-	-	-	15,228	-	112,304	832,328
Warwick	-	-	-	-	-	-	-	-	-	81,237	882,371
WEST SUSSEX											
Adur											
Arun	-	-	947	-	-	-	-	-	-	113,991	1,130,068
Chichester	-	2,410	3,652	-	-	-	1,015	-	-	40,664	955,746
Crawley	-	-	-	-	-	-	-	-	-	132,106	625,587
Horsham	-	-	458	-	-	-	-	-	-	108,955	823,775
Mid Sussex	-	-	1,180	-	-	-	-	-	-	32,733	870,073
Worthing	70,276	618	1,467	-	-	-	381	-	-	125,465	923,990
WILTSHIRE											
Kennet	1,663	86	-	-	-	-	-	12,177	-	92,711	381,737
North Wiltshire	-	-	-	-	-	-	391	-	-	25,402	625,330
Salisbury	39,241	1,885	7,702	-	-	-	-	8,635	-	170,265	726,458
Thamesdown											
West Wiltshire											
Isles of Scilly	-	-	-	-	-	-	-	-	-	5,030	33,495

CAPITAL EXPENDITURE ON REPLACEMENT VEHICLES				COSTS OF COLLECTION					
				COST PER TONNE					
Revenue (96)	Loan (97)	Repairs & Renewals Fund (98)	Lease (99)	Gross (100)	Net (101)	Net cost per domestic hereditament (102)	Net cost per head of population (103)	Waste collected per head of population (104)	Local Authority
£'000	£'000	£'000	£'000	£	£	£	£	kg	
									NON-MET DISTRICTS-ENGLAND
									SHROPSHIRE
-	-	19	-	19.50	17.52	17.10	6.25	354	Bridgnorth
-	-	-	-	**	**	21.92	7.89	**	North Shropshire
									Oswestry
-	-	-	-	25.07	23.18	19.51	7.45	323	Shrewsbury & Atcham
-	-	31	-	23.71	22.34	15.25	6.32	277	South Shropshire
									The Wrekin
									SOMERSET
-	-	-	-	16.53	14.85	11.52	4.29	289	Mendip
-	-	-	27	17.58	16.58	16.62	6.30	380	Sedgemoor
-	-	-	-	11.37	10.50	8.93	3.45	328	Taunton Deane
									West Somerset
-	-	-	204	19.68	18.48	12.77	4.92	266	Yeovil
									STAFFORDSHIRE
-	-	-	22	23.63	22.30	19.28	6.97	310	Cannock Chase
-	-	-	38	20.26	18.57	22.32	8.38	451	East Staffordshire
-	-	42	-	29.88	26.73	21.38	7.47	279	Lichfield
-	-	-	-	38.52	36.30	27.11	10.36	283	Newcastle-under-Lyme
-	-	-	70	22.12	21.41	19.37	7.00	325	South Staffordshire
-	-	-	171	25.32	21.98	20.47	7.48	333	Stafford
									Staffordshire Moorlands
-	-	118	-	26.74	23.28	18.83	7.39	318	Stoke-on-Trent
-	-	-	-	19.28	17.64	22.78	8.22	466	Tamworth
									SUFFOLK
-	-	31	62	32.51	31.30	23.00	8.72	410	Babergh
-	-	-	-	21.62	19.88	14.95	5.46	278	Forest Heath
-	-	-	-	**	**	16.71	6.47	**	Ipswich
-	35	-	-	**	**	18.91	7.18	**	Mid Suffolk
-	-	-	-	24.59	21.98	16.83	6.16	281	St Edmundsbury
-	-	-	-	32.72	29.63	20.23	8.02	265	Suffolk Coastal
-	-	-	117	33.12	29.68	17.93	7.41	248	Waveney
									SURREY
-	-	-	-	34.44	30.77	22.30	8.81	282	Elmbridge
-	-	32	-	30.33	28.11	20.87	7.66	270	Epsom & Ewell
15	-	-	68	37.08	31.21	24.01	8.84	279	Guildford
-	-	99	-	34.28	31.78	25.43	9.74	306	Mole Valley
-	-	-	33	55.23	52.48	29.64	11.16	213	Reigate & Banstead
-	-	-	-	28.46	25.21	20.88	7.56	294	Runnymede
-	67	-	-	33.30	31.49	24.11	9.34	297	Spelthorne
-	-	-	60	25.93	20.73	17.33	5.94	286	Surrey Heath
									Tandridge
-	-	89	-	32.16	29.19	21.99	8.03	273	Waverley
-	-	34	-	30.98	27.42	18.63	7.12	254	Woking
									WARWICKSHIRE
									North Warwickshire
-	-	137	-	32.19	27.44	19.85	7.27	265	Nuneaton & Bedworth
									Rugby
-	-	-	36	36.29	31.92	21.58	8.17	252	Stratford-on-Avon
-	-	40	-	28.91	26.44	20.12	7.63	285	Warwick
									WEST SUSSEX
									Adur
-	72	-	-	36.49	33.10	20.94	9.21	274	Arun
-	-	-	-	32.14	30.82	23.70	9.58	311	Chichester
-	-	-	151	25.68	21.21	20.51	7.56	356	Crawley
-	-	-	73	35.61	31.45	21.01	7.98	253	Horsham
-	-	-	-	31.78	30.62	20.01	7.32	237	Mid Sussex
-	-	-	37	37.74	33.19	22.67	9.89	295	Worthing
									WILTSHIRE
35	-	-	-	19.13	15.35	16.95	5.78	372	Kennet
-	-	66	-	21.69	20.84	16.85	5.86	281	North Wiltshire
-	109	-	-	25.18	20.31	20.00	7.09	341	Salisbury
									Thamesdown
									West Wiltshire
-	-	-	-	26.57	23.10	38.72	16.75	725	Isles of Scilly

Local Authority	POPULATION & AREA			NUMBER OF HEREDITAMENTS				WASTE COLLECTED – BY WEIGHT			% OF TOTAL WASTE COLLECTED BY CONTRACTORS	
	Population at 30.6.83 (1)	Area (2)	Density of population at 30.6.83 (3)	Domestic (4)	Commercial (5)	Industrial (6)	Other (7)	Total weight of all waste (8)	Actual or estimated weight of all waste (9)	Estimated % of waste weighed (10)	Routine collections (11)	Abnormal circumstances (12)
	'000	hectares	per hectare					tonnes		%	%	%
NON-MET DISTRICTS-WALES												
CLWYD												
Alyn & Deeside	72.8	13,420	4.72	26,357	3,141	170	417	47,520	A	96	-	-
Colwyn	49.8	33,298	0.90	22,463	2,635	33	644	28,780	E	5	-	-
Delyn	65.7	27,824	2.36	24,346	2,915	141	486	20,640	A	100	-	-
Glyndwr	40.3	96,596	0.42	16,402	2,392	92	763	20,000	E	4	-	-
Rhuddlan	32.8	10,865	4.86	21,213	2,611	43	714	25,500	E	-	-	-
Wrexham Maelor	113.9	36,648	3.11	43,102	6,034	232	751	53,160	E	5	-	-
DYFED												
Carmarthen	52.5	118,194	0.44	20,596	2,672	73	716	21,000	A	80	15	-
Ceredigion	62.0	179,330	0.35	25,433	3,679	97	905	28,500	E	-	-	-
Dinefwr												
Llanelli	75.1	23,361	3.21	29,865	3,622	139	467	80,000	E	-	-	-
Preseli	70.2	115,049	0.61	27,367	4,212	93	944	28,200	E	-	-	-
South Pembrokeshire	38.5	43,570	0.88	15,802	3,011	57	577	16,000	E	-	-	-
GWENT												
Blaenau Gwent	78.7	12,685	6.20	31,077	5,087	163	565	36,363	E	22	25	-
Islwyn	66.5	10,133	6.56	24,827	3,921	100	377	70,000	E	-	-	-
Monmouth	74.3	82,361	0.90	27,058	4,049	67	841	18,944	A	100	-	-
Newport	130.2	20,060	6.49	49,895	7,303	182	724	65,000	E	-	-	-
Torfaen	90.2	12,448	7.25	34,451	6,842	277	503	40,972	E	-	-	-
GWYNEDD												
Aberconwy	51.3	60,575	0.85	21,719	3,601	63	806	16,000	E	-	-	-
Arfon	54.9	40,966	1.34	23,172	3,271	84	721	25,000	E	-	-	-
Dwyfor	26.1	62,000	0.42	13,267	2,425	50	595	16,600	E	-	-	-
Meirionnydd												
Ynys Mon (Anglesey)	68.4	71,511	0.96	28,074	3,645	93	834	29,500	E	-	-	-
MID GLAMORGAN												
Cynon Valley	66.4	17,737	3.74	26,294	3,299	94	440	22,500	A	100	-	-
Merthyr Tydfil	59.9	11,195	5.35	23,008	3,574	77	667	42,930	E	-	20	-
Ogwr	130.4	28,572	4.56	47,816	5,927	207	718	45,500	E	*	*	-
Rhondda	80.7	9,934	8.11	31,701	4,510	110	571	25,000	E	100	-	-
Rhymney Valley	104.7	17,600	5.95	38,056	4,725	209	705	97,250	E	-	-	-
Taff-Ely												
POWYS												
Brecknock	40.9	179,338	0.23	15,831	2,714	67	1,010	12,000	E	-	-	-
Montgomery	48.0	206,430	0.23	20,171	4,063	198	881	16,000	E	-	-	-
Radnor												
Cardiff	279.8	12,013	23.29	103,371	12,604	414	1,889	103,432	E	99	-	-
Vale of Glamorgan	111.9	29,648	3.77	39,946	4,944	71	849	32,075	A	100	-	-
SOUTH GLAMORGAN												
Afan	53.0	15,364	3.45	20,215	2,557	89	338	55,734	E	5	-	-
Llliw Valley	60.0	21,375	2.81	23,527	2,798	120	389	29,500	E	-	-	-
Neath	65.7	20,515	3.20	25,637	2,679	137	586	24,700	E	-	-	-
Swansea	187.9	24,539	7.66	70,621	7,309	202	1,024	94,084	A	95	-	-

WASTE COLLECTED – BY TYPE			WASTE COLLECTED – BY METHOD OF STORAGE				METHODS OF COLLECTION						
							HOUSEHOLD WASTE						
Household waste (13)	Commercial waste (14)	Industrial waste (15)	Contained in dustbins (16)	Contained in disposable sacks (17)	Contained in bulk storage containers (18)	Other (19)	Backdoor collect & return (20)	Kerbside (21)	Other collect & return (22)	Skep (23)	Other normal methods (24)	Special collections (25)	Local Authority
%	%	%	%	%	%	%	%	%	%	%	%	%	
													NON-MET DISTRICTS-WALES
													CLWYD
60	40		-	72	28	-	70	-	-	28	-	2	Alyn & Deeside
65	30	5	-	80	20	-	97	-	-	-	-	3	Colwyn
85	15	-	-	83	15	2	88	-	-	-	11	1	Delyn
75	25	-	-	100	-	-	85	10	-	-	-	5	Glyndwr
84	16	-	-	100	-	-	100	-	-	-	-	-	Rhuddlan
88	2	10	21	67	11	1	98	-	-	-	-	2	Wrexham Maelor
													DYFED
76	24	-	94	6	-	-	1	96	-	-	-	3	Carmarthen
82	18	-	48	48	4	-	10	87	-	-	1	2	Ceredigion
													Dinefwr
**	**	**	90	8	2	-	20	20	60	-	-	-	Llanelli
94	3	3	4	86	10	-	-	100	-	-	-	-	Preseli
88	12	-	-	74	16	10	2	84	-	-	13	1	South Pembrokeshire
													GWENT
86	10	4	55	23	22	-	5	95	-	-	-	-	Blaenau Gwent
85	5	10	83	2	5	10	-	85	-	-	7	8	Islwyn
75	20	5	100		-	-	2	90	-	-	-	8	Monmouth
65	20	15	52	11	2	35	-	98	-	-	-	2	Newport
85	15	-	57	38	5	-	-	93	-	-	-	7	Torfaen
													GWYNEDD
85	14	1	100		-	-	87	-	5	-	-	8	Aberconwy
80	20	-	-	85	-	15	19	78	-	-	-	3	Arfon
69	31	-	56	18	-	26	20	78	2	-	-	-	Dwyfor
													Meironnydd
85	10	5	60	39	-	1	90	10	-	-	-	-	Ynys Mon (Anglesey)
													MID GLAMORGAN
93	7	-	99	1	-	-	10	88	-	-	-	2	Cynon Valley
76	7	17	61	2	20	17	-	80	-	-	-	20	Merthyr Tydfil
85	13	2	1	84	5	10	-	99	-	-	-	1	Ogwr
80	20	-	96	-	4	-	-	100	-	-	-	-	Rhondda
55	10	35	52	3	45	-	15	72	-	6	5	2	Rhymney Valley
													Taff-Ely
													POWYS
70	25	5	-	85	-	15	-	95	-	-	-	5	Brecknock
70	25	5	-	98	2	-	20	80	-	-	-	-	Montgomery
													Radnor
91	9	-	-	80	20	-	-	80	-	-	17	3	Cardiff
92	8	-	-	92	5	3	-	94	-	-	3	3	Vale of Glamorgan
													SOUTH GLAMORGAN
46	33	21	-	39	24	37	-	95	-	-	-	5	Afan
85	15	-	71	10	-	19	-	95	-	-	-	5	Lliw Valley
99	1	-	-	100	-	-	20	75	-	-	-	5	Neath
40	60	-	-	80	20	-	-	98	-	-	-	2	Swansea

Local Authority	METHODS OF COLLECTION: COMMERCIAL WASTE: Backdoor collect & return (26)	Kerbside (27)	Other collect & return (28)	Skep (29)	Other normal methods (30)	Special collections (31)	Collection system (See Notes) (32)	NUMBER OF DISPOSABLE SACKS USED: Paper (33)	Plastic (34)
	%	%	%	%	%	%		'000	'000
NON-MET DISTRICTS-WALES									
CLWYD									
Alyn & Deeside	-	-	-	100	-	-	T	-	2,250
Colwyn	80	20	-	-	-	-	T	-	1,700
Delyn	58	-	-	-	41	1	C	6	2,288
Glyndwr	100	-	-	-	-	-	T	225	1,200
Rhuddlan	100	-	-	-	-	-	T	-	2,250
Wrexham Maelor	100	-	-	-	-	-	T	151	2,617
DYFED									
Carmarthen	-	85	-	-	15	-	T	-	-
Ceredigion	48	35	-	-	15	2	T	-	60
Dinefwr									
Llanelli	-	100	-	-	-	-	T	-	195
Preseli	-	80	-	20	-	-	C	-	2,003
South Pembrokeshire	-	62	-	-	38	-	B	10	1,500
GWENT									
Blaenau Gwent	5	95	-	-	-	-	B	-	160
Islwyn	-	-	-	-	100	-	T	-	15
Monmouth	-	100	-	-	-	-	T	-	-
Newport	-	60	-	-	40	-	T	8	1,001
Torfaen	25	25	-	-	50	-	B	-	650
GWYNEDD									
Aberconwy	87	-	5	-	-	8	T	4	281
Arfon	10	90	-	-	-	-	T	-	1,600
Dwyfor	37	63	-	-	-	-	T	-	15
Meironnydd									
Ynys Mon (Anglesey)	80	20	-	-	-	-	T	5	6
MID GLAMORGAN									
Cynon Valley	-	99	1	-	-	-	T	-	25
Merthyr Tydfil	-	100	-	-	-	-	C	-	56
Ogwr	-	95	-	-	5	-	T	-	3,500
Rhondda	-	100	-	-	-	-	T	-	-
Rhymney Valley	-	80	-	20	-	-	T	-	250
Taff-Ely									
POWYS									
Brecknock	10	90	-	-	-	-	**	-	1,200
Montgomery	28	70	-	-	2	-	B	-	1,250
Radnor									
Cardiff	-	70	-	-	30	-	T	-	6,100
Vale of Glamorgan	-	72	-	-	28	-	T	2	3,000
SOUTH GLAMORGAN									
Afan	40	40	-	-	20	-	T	-	2,100
Lliw Valley	5	95	-	-	-	-	T	-	50
Neath	-	100	-	-	-	-	T	-	2,429
Swansea	-	70	30	-	-	-	T	-	5,000

NUMBER OF BULK STORAGE CONTAINERS		PROVISION OF DUSTBINS/ SACKHOLDERS		FREQUENCY OF COLLECTION PER WEEK						Local Authority
				NORMAL HOUSEHOLD WASTE			COMMERCIAL WASTE			
With compaction (35)	Without compaction (36)	Charge (See Notes) (37)	Number (38)	Twice or more (39)	Once (40)	Less than once (41)	Twice or more (42)	Once (43)	Less than once (44)	
				%	%	%	%	%	%	
										NON-MET DISTRICTS-WALES
										CLWYD
-	30	F	3,000	-	100	-	80	-	20	Alyn & Deeside
-	8	C	164	-	100	-	20	80	-	Colwyn
2	43	F	500	-	100	-	10	90	-	Delyn
-	-	N	-	-	92	8	-	100	-	Glyndwr
-	-	F	700	-	100	-	20	80	-	Rhuddlan
1	137	C	987	-	100	-	20	80	-	Wrexham Maelor
										DYFED
1	23	N	-	-	80	20	85	15	-	Carmarthen
-	160	N	-	-	95	5	60	40	-	Ceredigion
										Dinefwr
**	**	C	1,537	-	100	-	50	50	-	Llanelli
-	210	N	-	-	99	1	25	75	-	Preseli
-	100	N	-	-	100	-	20	80	-	South Pembrokeshire
										GWENT
-	-	C	1,629	-	100	-	-	100	-	Blaenau Gwent
-	12	F	2,580	-	100	-	-	100	-	Islwyn
-	-	N	-	-	100	-	80	20	-	Monmouth
-	1,020	N	-	**	**	**	30	70	-	Newport
-	120	N	-	-	100	-	100	-	-	Torfaen
										GWYNEDD
-	-	N	-	-	95	5	6	94	-	Aberconwy
-	-	F	6	-	100	-	20	80	-	Arfon
-	-	N	-	-	100	-	31	69	-	Dwyfor
										Meirionnydd
-	-	N	-	-	100	-	5	95	-	Ynys Mon (Anglesey)
										MID GLAMORGAN
-	-	N	-	98	2	-	-	100	-	Cynon Valley
-	87	N	-	-	100	-	-	100	-	Merthyr Tydfil
-	350	N	-	-	100	-	70	30	-	Ogwr
-	-	N	-	-	100	-	-	100	-	Rhondda
-	20	N	**	-	100	-	-	100	-	Rhymney Valley
										Taff-Ely
										POWYS
-	-	N	-	15	80	5	30	70	-	Brecknock
-	22	N	-	1	95	4	5	95	-	Montgomery
										Radnor
5	1,952	N	-	-	100	-	10	90	-	Cardiff
-	125	N	-	-	100	-	75	25	-	Vale of Glamorgan
										SOUTH GLAMORGAN
-	9	F	-	-	100	-	10	90	-	Afan
-	-	N	-	-	100	-	50	50	-	Lliw Valley
-	-	F	946	-	100	-	-	100	-	Neath
10	875	N	-	-	100	-	50	50	-	Swansea

Local Authority	NUMBER OF BOTTLE BANKS		WASTE OIL COLLECTION POINTS		AMOUNT OF WASTE				
	Owned & operated by the local authority (45)	Other (46)	Owned & operated by the local authority (47)	Other (e.g. garages) (48)	Paper (49)	Abandoned Vehicles (50)	Glass (51)	Oil (52)	Ferrous Metals (53)
					tonnes	no.	tonnes	'000 litres	tonnes
NON-MET DISTRICTS-WALES									
CLWYD									
Alyn & Deeside	-	-	-	-	-	10	-	-	-
Colwyn	7	-	-	-	-	36	207	-	-
Delyn	-	-	-	-	-	70	-	-	-
Glyndwr	-	-	-	-	-	13	-	-	-
Rhuddlan	-	-	-	-	-	14	-	-	-
Wrexham Maelor	-	-	2	-	-	400	-	5	48
DYFED									
Carmarthen	2	1	-	-	-	149	45	-	-
Ceredigion	-	3	-	-	-	15	**	-	-
Dinefwr									
Llanelli	-	-	-	-	-	-	-	-	-
Preseli	-	-	-	6	-	-	-	-	-
South Pembrokeshire	-	-	-	-	-	70	-	-	-
GWENT									
Blaenau Gwent	-	-	-	-	-	295	-	-	-
Islwyn	-	-	-	-	-	60	-	-	-
Monmouth	-	1	3	-	-	228	-	1	-
Newport	-	1	2	1	-	27	-	-	-
Torfaen	-	-	2	-	-	-	-	2	-
GWYNEDD									
Aberconwy	-	-	-	**	-	72	-	-	-
Arfon	-	-	-	-	-	109	-	-	-
Dwyfor	-	-	-	-	-	12	-	-	-
Meironnydd									
Ynys Mon (Anglesey)	-	-	-	-	-	-	-	-	-
MID GLAMORGAN									
Cynon Valley	-	-	-	1	-	23	-	-	-
Merthyr Tydfil	-	-	-	-	-	45	-	-	-
Ogwr	4	-	-	-	-	320	140	-	-
Rhondda	-	-	-	-	-	**	-	-	-
Rhymney Valley	-	-	4	-	-	182	-	10	-
Taff-Ely									
POWYS									
Brecknock	-	-	-	-	-	-	-	-	-
Montgomery	-	-	-	-	-	39	-	-	-
Radnor									
Cardiff	-	-	5	-	-	55	-	12	-
Vale of Glamorgan	-	-	1	-	-	16	-	2	-
SOUTH GLAMORGAN									
Afan	-	-	-	-	-	15	-	-	-
Lliw Valley	-	-	-	-	-	51	-	-	-
Neath	-	-	-	-	-	-	-	-	-
Swansea	-	-	-	-	-	60	-	-	-

RECLAIMED		NUMBER OF LOCAL AUTHORITY'S COLLECTION VEHICLES				NUMBER OF CONTRACTORS' COLLECTION VEHICLES				
		SPECIALIST				SPECIALIST				
Non-Ferrous Metals (54)	Other (55)	With compaction (56)	Without compaction (57)	General purpose (58)	Total (59)	With compaction (60)	Without compaction (61)	General purpose (62)	Total (63)	Local Authority
tonnes	tonnes									
										NON-MET DISTRICTS-WALES
										CLWYD
-	-	10	3	3	16	-	-	-	-	Alyn & Deeside
-	-	11	-	2	13	-	-	-	-	Colwyn
-	-	11	1	-	12	-	-	-	-	Delyn
-	-	7	-	1	8	-	-	-	-	Glyndwr
-	-	11	1	-	12	-	-	-	-	Rhuddlan
-	-	22	2	-	24	-	-	-	-	Wrexham Maelor
										DYFED
-	-	9	-	1	10	**	**	**	**	Carmarthen
-	-	15	-	-	15	-	-	-	-	Ceredigion
										Dinefwr
-	-	3	11	4	18	-	-	-	-	Llanelli
-	-	9	-	2	11	-	-	-	-	Preseli
-	-	6	-	3	9	-	-	-	-	South Pembrokeshire
										GWENT
-	-	14	1	-	15	1	-	-	1	Blaenau Gwent
-	-	11	1	2	14	-	-	-	-	Islwyn
-	-	13	-	3	16	-	-	-	-	Monmouth
-	-	18	2	1	21	-	-	-	-	Newport
-	-	10	2	-	12	-	-	-	-	Torfaen
										GWYNEDD
-	-	16	-	1	17	-	-	-	-	Aberconwy
-	-	9	-	2	11	-	-	-	-	Arfon
-	-	9	-	4	13	-	-	-	-	Dwyfor
										Meirionnydd
-	-	12	-	2	14	-	-	-	-	Ynys Mon (Anglesey)
										MID GLAMORGAN
-	-	14	1	-	15	-	-	-	-	Cynon Valley
-	-	10	-	-	10	-	2	-	2	Merthyr Tydfil
-	-	24	-	4	28	**	**	**	**	Ogwr
-	-	13	-	2	15	-	-	-	-	Rhondda
-	-	15	1	1	17	-	-	-	-	Rhymney Valley
										Taff-Ely
										POWYS
-	-	10	-	-	10	-	-	-	-	Brecknock
-	-	11	-	-	11	-	-	-	-	Montgomery
										Radnor
-	-	35	9	4	48	-	-	-	-	Cardiff
-	-	14	-	1	15	-	-	-	-	Vale of Glamorgan
										SOUTH GLAMORGAN
-	-	2	1	-	3	-	-	-	-	Afan
-	-	9	-	-	9	-	-	-	-	Lliw Valley
-	-	9	-	4	13	-	-	-	-	Neath
-	-	27	-	-	27	-	-	-	-	Swansea

WASTE COLLECTION STATISTICS

Local Authority	LOCAL AUTHORITY STAFF EMPLOYED AT 31.3.84								EXPENDITURE			
	Drivers (64)	Loaders (65)	Drivers/ Loaders (66)	Other manual (67)	Vehicle maintenance (68)	Technical & administrative (69)	Total (70)	Contractors' manual employees (71)	Employees (72)	Premises/ depots (73)	Provision of disposable sacks (74)	Provision of dustbins (75)
	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	f.t.e.	£	£	£	£
NON-MET DISTRICTS-WALES												
CLWYD												
Alyn & Deeside	-	32	8	-	2	4	46	-	355,863	23,863	61,610	2,424
Colwyn	-	17	11	-	2	3	33	-	352,150	6,272	49,137	-
Delyn	8	30	6	-	-	2	46	-	411,369	4,600	50,915	5,339
Glyndwr	-	21	8	-	-	1	30	-	236,187	-	61,755	-
Rhuddlan	-	26	12	-	2	2	42	-	316,893	3,169	98,669	-
Wrexham Maelor	22	65	-	-	4	6	97	-	787,043	12,911	90,331	9,169
DYFED												
Carmarthen	7	15	1	-	1	2	26	**	269,046	5,890	-	912
Ceredigion	-	23	12	-	3	2	40	-	286,217	11,906	-	-
Dinefwr												
Llanelli	8	24	-	-	4	4	40	-	349,641	74,561	-	13,882
Preseli	-	16	10	9	1	3	39	-	235,501	196	50,929	-
South Pembrokeshire	8	12	3	-	2	1	26	-	109,891	985	21,529	-
GWENT												
Blaenau Gwent	8	21	-	-	2	-	31	-	292,009	-	-	-
Islwyn	11	19	-	-	2	4	36	-	330,094	6,100	11,822	
Monmouth	10	20	1	-	3	3	37	-	354,255	28,765	7,746	-
Newport	18	46	-	-	5	5	74	-	538,084	68,955	29,037	-
Torfaen	15	29	-	-	-	3	47	-	467,021	910	33,000	150
GWYNEDD												
Aberconwy	12	39	5	-	5	4	65	-	422,888	-	14,227	-
Arfon	11	31	1	-	1	2	46	-	403,163	978	59,671	-
Dwyfor	-	15	10	-	3	1	29	-	163,404	-	7,251	-
Meironnydd												
Ynys Mon (Anglesey)	12	36	3	-	2	3	56	-	360,245	154,390	1,549	-
MID GLAMORGAN												
Cynon Valley	11	22	-	-	2	3	38	-	304,850	6,500	900	-
Merthyr Tydfil	7	22	-	-	2	4	35	-	261,600	15,336	-	-
Ogwr	-	50	22	-	5	6	83	**	564,706	39,687	118,945	-
Rhondda	14	37	-	-	15	3	69	-	427,948	-	-	4,067
Rhymney Valley	9	27	-	-	5	5	46	-	329,618	-	5,682	-
Taff-Ely												
POWYS												
Brecknock	9	17	-	-	1	2	29	-	137,079	46,271	33,699	-
Montgomery	9	13	-	-	-	*	22	-	174,296	-	40,446	-
Radnor												
Cardiff	45	77	-	-	20	19	161	-	1,127,268	55,980	156,956	-
Vale of Glamorgan	13	30	-	-	2	1	46	-	421,397	2,995	90,802	-
SOUTH GLAMORGAN												
Afan	-	9	3	-	1	2	15	-	97,756	23,181	53,671	-
Lliw Valley	6	22	1	-	2	2	33	-	249,894	44,653	1,741	-
Neath	7	21	1	-	2	2	33	-	246,812	872	82,662	5,905
Swansea	21	73	-	4	3	7	108	-	927,158	80,701	123,744	-

EXPENDITURE						INCOME			
			AGENCY SERVICES			COLLECTION SERVICES			
Transport & moveable plant (76)	Establishment expenses (77)	Other running expenses (78)	Other local authorities (79)	Contractors (80)	Gross Expenditure (81)	Commercial waste (82)	Bulky household waste (83)	Other (84)	Local Authority
£	£	£	£	£	£	£	£	£	
									NON-MET DISTRICTS-WALES
									CLWYD
201,325	50,699	5,565	-	-	701,549	7,216	13,760	171	Alyn & Deeside
41,353	34,030	395	-	-	483,537	22,001	1,966	1,786	Colwyn
146,847	53,410	1,892	-	-	674,372	18,300	-	10,497	Delyn
91,953	11,148	13,524	-	11,306	425,873	1,893	-	-	Glyndwr
141,144	8,830	6,614	-	-	575,319	1,457	-	9,248	Rhuddlan
309,847	118,300	26,763	-	-	1,334,364	126,310	-	6,843	Wrexham Maelor
									DYFED
135,926	3,029	5,595	-	14,375	434,773	6,506	-	1,203	Carmarthen
153,668	46,104	11,031	-	-	508,926	4,776	-	1,208	Ceredigion
									Dinefwr
155,178	56,540	3,383	-	-	653,185	-	-	1,472	Llanelli
210,812	41,245	5,169	-	-	543,852	26,951	-	4,601	Preseli
91,803	18,602	1,732	-	-	244,542	12,852	458	-	South Pembrokeshire
									GWENT
487,260	150,511	204,619	-	-	1,134,399	12,844	-	37,453	Blaenau Gwent
200,881	7,570	12,829	-	-	569,296	1,000	-	-	Islwyn
161,228	142,252	2,858	-	-	697,104	2,858	-	2,260	Monmouth
248,200	19,914	42,070	-	-	946,260	79,717	-	12,438	Newport
188,092	7,634	10,900	-	-	707,707	35,791	1,807	-	Torfaen
									GWYNEDD
175,097	53,831	-	-	2,501	668,544	20,668	2,494	-	Aberconwy
168,940	3,557	2,526	-	3,958	642,793	13,219	-	1,343	Arfon
96,990	13,963	3,759	-	-	285,367	16,687	-	-	Dwyfor
									Meirionnydd
186,890	30,190	10,540	-	-	743,804	20,851	-	31	Ynys Mon (Anglesey)
									MID GLAMORGAN
302,200	4,900	3,300	-	-	622,650	22,500	-	-	Cynon Valley
167,613	32,930	3,118	-	31,142	511,739	7,625	-	-	Merthyr Tydfil
388,825	26,100	5,017	-	-	1,143,280	9,867	972	17,323	Ogwr
114,231	61,558	8,388	-	-	616,392	-	-	-	Rhondda
154,118	80,550	1,714	-	-	571,682	-	-	1,418	Rhymney Valley
									Taff-Ely
									POWYS
151,334	43,619	10,165	2,930	13,210	438,307	1,900	-	-	Brecknock
193,757	59,053	11,997	-	-	479,549	24,232	-	-	Montgomery
									Radnor
777,235	42,992	55,307	-	-	2,215,738	329,347	-	-	Cardiff
149,434	98,675	109	-	-	763,412	15,121	-	-	Vale of Glamorgan
									SOUTH GLAMORGAN
116,215	9,255	-	-	-	300,078	5,743	-	-	Afan
69,844	21,433	5,377	-	799	393,741	6,975	-	-	Lliw Valley
149,694	53,284	37,408	-	-	576,637	24,383	-	-	Neath
421,788	144,239	588	-	-	1,698,218	221,805	-	-	Swansea

Local Authority	INCOME: SALES OF RECLAIMED WASTE: Paper (85)	Abandoned Vehicles (86)	Glass (87)	Oil (88)	Ferrous Metals (89)	Non-Ferrous Metals (90)	Other (91)	CONTRIBUTIONS FROM OTHER AUTHORITIES: Waste Disposal Authority (92)	Other local authorities (93)	Total Income (94)	Total Net Expenditure (95)
	£	£	£	£	£	£	£	£	£	£	£
NON-MET DISTRICTS-WALES											
CLWYD											
Alyn & Deeside	-	-	-	-	-	-	-	-	-	21,147	680,402
Colwyn	-	471	603	-	-	-	-	-	-	27,027	456,510
Delyn	-	-	-	-	-	-	-	-	-	28,797	645,575
Glyndwr	-	-	-	-	-	-	-	-	-	1,893	423,980
Rhuddlan	-	-	-	-	-	-	-	-	-	10,705	564,614
Wrexham Maelor	-	1,288	-	294	728	-	-	-	-	135,463	1,218,901
DYFED											
Carmarthen	-	87	385	-	-	-	-	-	-	8,181	426,592
Ceredigion	-	-	-	-	-	-	-	-	13,631	19,615	489,311
Dinefwr											
Llanelli	-	-	-	-	-	-	-	-	-	1,472	651,713
Preseli	-	-	-	-	-	-	-	-	797	32,349	511,503
South Pembrokeshire	-	-	-	-	-	-	483	-	-	13,793	230,749
GWENT											
Blaenau Gwent	-	-	-	-	-	-	-	-	-	50,297	1,084,102
Islwyn	-	-	-	-	-	-	-	-	-	1,000	568,296
Monmouth	-	-	-	-	-	-	-	-	-	5,118	691,986
Newport	-	864	-	-	-	-	-	-	-	93,019	853,241
Torfaen	-	-	-	-	-	-	-	-	-	37,598	670,109
GWYNEDD											
Aberconwy	-	434	-	-	-	-	-	-	-	23,596	644,948
Arfon	-	-	-	-	-	-	-	-	-	14,562	628,231
Dwyfor	-	-	-	-	-	-	-	-	-	16,687	268,680
Meironnydd											
Ynys Mon (Anglesey)	-	-	-	-	-	-	-	-	-	20,882	722,922
MID GLAMORGAN											
Cynon Valley	-	-	-	-	-	-	-	-	-	22,500	600,150
Merthyr Tydfil	-	-	-	-	-	-	-	-	-	7,625	504,114
Ogwr	-	-	624	-	-	-	-	-	-	28,786	1,114,494
Rhondda	-	-	-	-	-	-	-	-	-	-	616,392
Rhymney Valley	-	-	-	700	-	-	-	-	-	2,118	569,564
Taff-Ely											
POWYS											
Brecknock	-	-	-	-	-	-	-	-	-	1,900	436,407
Montgomery	-	-	-	-	-	-	-	-	-	24,232	455,317
Radnor											
Cardiff	-	-	-	-	-	-	-	-	-	329,347	1,886,391
Vale of Glamorgan	-	147	-	-	-	-	-	-	-	15,268	748,144
SOUTH GLAMORGAN											
Afan	-	-	-	-	-	-	-	-	-	5,743	294,335
Lliw Valley	-	-	-	-	-	-	-	-	-	6,975	306,766
Neath	-	-	-	-	-	-	-	-	-	24,383	552,254
Swansea	-	-	-	-	-	-	-	-	-	221,805	1,476,413

1983-84 ACTUALS

CAPITAL EXPENDITURE ON REPLACEMENT VEHICLES				COSTS OF COLLECTION					
				COST PER TONNE					
Revenue (96)	Loan (97)	Repairs & Renewals Fund (98)	Lease (99)	Gross (100)	Net (101)	Net cost per domestic hereditament (102)	Net cost per head of population (103)	Waste collected per head of population (104)	Local Authority
£'000	£'000	£'000	£'000	£	£	£	£	kg	
									NON-MET DISTRICTS-WALES
									CLWYD
-	-	-	127	14.76	14.32	25.81	9.35	653	Alyn & Deeside
-	-	-	37	16.80	15.86	20.32	9.17	578	Colwyn
-	-	-	-	32.67	31.28	26.52	9.83	314	Delyn
-	-	-	-	21.29	21.20	25.85	10.52	496	Glyndwr
-	-	-	82	22.56	22.14	26.61	10.69	483	Rhuddlan
-	-	-	61	25.48	22.93	28.28	10.70	467	Wrexham Maelor
									DYFED
-	-	-	36	20.70	20.31	20.71	8.13	400	Carmarthen
-	-	-	-	17.86	17.69	19.24	7.89	460	Ceredigion
									Dinefwr
-	-	-	95	8.16	8.15	21.82	8.68	1,065	Llanelli
-	-	-	38	19.29	18.17	18.55	7.29	402	Preseli
-	-	34	-	15.28	14.42	14.60	5.99	416	South Pembrokeshire
									GWENT
-	-	-	-	31.20	29.81	34.88	13.78	462	Blaenau Gwent
-	-	-	64	8.13	8.12	22.89	8.55	1,053	Islwyn
-	-	-	-	36.80	36.53	25.57	9.31	255	Monmouth
-	-	-	127	14.56	13.13	17.10	6.55	499	Newport
-	-	-	-	17.27	16.36	19.45	7.43	454	Torfaen
									GWYNEDD
-	-	-	52	41.78	40.31	29.70	12.57	312	Aberconwy
-	-	-	-	25.71	25.13	27.11	11.44	455	Arfon
-	-	-	32	17.19	16.19	20.25	10.29	636	Dwyfor
									Meironnydd
-	-	-	-	25.21	24.51	25.75	10.57	431	Ynys Mon (Anglesey)
									MID GLAMORGAN
-	-	-	-	27.67	26.67	22.82	9.04	339	Cynon Valley
-	-	-	96	11.92	11.74	21.91	8.42	717	Merthyr Tydfil
-	-	-	81	25.13	24.49	23.31	8.55	349	Ogwr
-	-	-	34	24.66	24.66	19.44	7.64	310	Rhondda
-	-	-	16	5.88	5.86	14.97	5.44	929	Rhymney Valley
									Taff-Ely
									POWYS
-	-	-	-	36.28	36.12	27.57	10.67	293	Brecknock
-	-	-	-	29.97	28.46	22.57	9.49	333	Montgomery
									Radnor
-	-	277	-	21.42	18.23	18.25	6.74	370	Cardiff
-	-	101	-	23.80	23.32	18.73	6.69	287	Vale of Glamorgan
									SOUTH GLAMORGAN
-	-	-	-	5.38	5.28	14.56	5.55	1,052	Afan
-	-	-	-	13.35	13.11	16.44	6.45	492	Llŷw Valley
-	-	32	-	23.35	22.36	21.52	8.41	376	Neath
-	-	-	98	18.05	15.69	20.91	7.86	501	Swansea